

MANUAL OF
PHYSICAL DRILL

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MANUAL OF PHYSICAL DRILL

UNITED STATES ARMY

BY

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INTRODUCTION.

THE object of this manual is to systematize physical training in the army, to furnish a practical guide that will enable any officer to give regular and beneficial instruction to his command.

Illustration is largely used as being the simplest mode of description. In such drills as the rifle, dumb-bell, etc., the sets of exercises are more or less similar and are all adapted to either set of music. However, sufficient variety is afforded to bring all the muscles into play.

The arrangement of the sets—the five exercises following one another without pause—compels the attention of the men and demands the concentration of mind upon the work in hand. This is all-important.

Simple and progressive exercises on the different apparatus, and the principles of wall scaling, climbing, etc., are given as being essential to the athletic training.

The methods pursued in training for track and field events are added as matters of general interest and information.



PHYSICAL DRILL.

METHOD OF INSTRUCTION.

Instruction in gymnastic drill will be under the direct charge of an officer or officers.

The nature of the drill is such that the younger officers would be in active command. Whenever practicable, there will be at least four drills per week, drill to be of about half an hour's duration. The best time for the drill is about two to three hours after breakfast.

Men who have been in the service from fifteen to twenty years and are somewhat old for active work will be "fallen out" before each drill and put under charge of an officer or noncommissioned officer and given a few minutes of light and entertaining exercise; this will keep them busy. There will always be a few old soldiers to whom the drill would be of no benefit, and they should be excused altogether. There will then be left for instruction a body of young and active men.

Instruction may be by company or by battalion or by regiment. If by battalion or regiment, the officer in charge should be assisted by several officers.

Energy and life should be instilled into the drill, and better results will be obtained if each instructor will go through the exercises himself, being an example which the men will follow. Men are more readily instructed by example than verbal instruc-

tion. They do not want long discourses on the part of their leaders; they want action. This is especially so in gymnastic drill.

This drill admits of great variety, and when properly conducted can not fail to be attractive, and the men will look forward to this feature of their life as a pleasure rather than an arduous duty. It is only with the heavier work that short and frequent rests are needed; many of the drills can be so varied that one part of the body can be rested while another part is being exercised. Never work the men to the point of exhaustion.

DRESS.

The following dress will be worn: Cap, blue shirt (or negligée shirt in summer), uniform or duck trousers, regulation or barrack shoes; regular gymnasium shoes are preferable for indoor work. A belt should take the place of suspenders. Flannel is the best material to wear next the body.

HYGIENE.

Exercise in the open air is always preferable to that indoors; however, men will not be taken out in severe weather, nor permitted to go out into the cold air while heated. If necessary to go out after exercising, additional wraps will be worn. Any accidents, sprains, etc., will be reported at once to the surgeon. The men complaining of inability to take part in the drills will also be reported to him.

BATHING.

Although there are different ideas about bathing, the following precautions are safe to follow:

With the sponge, shower, or tub bath, while the

body is heated, it should first be rubbed down well with towels; the water should be tepid, and, after washing to remove the impurities which arise from increased circulation, the water should be cooled several degrees in order to get the bracing effects, but not so cold as to cause chill. The warm water cleanses and the cold water braces. Then rub down well and dress deliberately, care being taken not to expose the body to draughts or cold. If necessary to go directly into the cold air, a safe precaution is to rub the body with alcohol. Do not make the bath too long, and never let the underclothing dry on the body after exercising. Cold baths can only be safely taken when the body is not heated, and even then it is not recommended except for the strongest constitutions. A hot bath may safely be taken just before going to bed.

THIRTY MINUTES' DRILL.

Example of varied instruction of a company when but little gymnastic apparatus is available, or only that which could be put up at any post:

Day.	Ten minutes.	Ten minutes.	Ten minutes.
1st	Rifle drill.	Running and walking.	Calisthenics.
2d	Dumb-bells.	Hurdling and sprinting.	Bar bell.
3d	Calisthenics.	Wall sealing.	Medicine balls.
4th	Rifle drill.	Long and high jumping.	Climbing ropes, planks, etc.
5th	Rifle drill.	Running and passing obstacles.	Horizontal beams.
6th	Calisthenics.	Hurdling and sprinting.	Bar bell.
7th	Indian clubs.	Wall sealing.	Medicine balls.
8th	Dumb-bells.	Climbing ropes, planks, etc.	Cockfight.
9th	Rifle drill.	Long and high jumping.	Carrying wounded.
10th	Calisthenics.	Horizontal beams.	Wall sealing.

Example of varied instruction of a company where necessary gymnastic apparatus is to be had. For apparatus work the company should be divided

into about four squads, which are gradually arranged according to proficiency :

Day.	Ten minutes.	Ten minutes.	Ten minutes.
1st	Company calisthenics.	1st squad, horizontal bar. 2d " parallel bar. 3d " horse. 4th " swinging rings.	1st squad, swinging rings. 2d " horizontal bar. 3d " parallel bar. 4th " horse.
2d	Company rifle drill.	1st " horizontal ladder. 2d " swinging rings. 3d " horizontal bar. 4th " horse.	1st " horse. 2d " horizontal ladder. 3d " swinging rings. 4th " horizontal bar.
3d	Company bar-bell drill.	1st " vaulting bar. 2d " poles. 3d " horizontal ladder. 4th " ropes.	1st " ropes. 2d " vaulting bar. 3d " poles. 4th " horizontal ladder.
4th	Company dumb bell.	1st " inclined ladder. 2d " horse. 3d " traveling rings. 4th " jumping stand'rd.	1st " jumping stand'rd. 2d " inclined ladder. 3d " horse. 4th " traveling rings.
5th	Company rifle drill.	Company running and walking.	1st " horizontal bar. 2d " parallel bar. 3d " inclined ladder. 4th " poles.
6th	Company calisthenics.	1st squad { wall scaling. 2d " { 3d " { broad and high 4th " { jump, leapfrog, etc.	1st " poles. 2d " horizontal bar. 3d " parallel bar. 4th " inclined ladder.
7th	Company bar-bell drill.	1st " horizontal ladder. 2d " inclined plank. 3d " swinging rings. 4th " horizontal bar.	Company cockfight.
8th	Company Indian clubs.	Company calisthenics.	1st squad, vaulting bar. 2d " horizontal ladder. 3d " poles. 4th " traveling rings.
9th	Company rifle drill.	1st squad, parallel bar. 2d " poles. 3d " horizontal ladder. 4th " vaulting bar.	1st " { broad and high 2d " { jump, leapfrog, etc. 3d " { 4th " { wall scaling.
10th	Company rifle drill.	1st " horizontal ladder. 2d " horse. 3d " traveling rings. 4th " ropes.	Company at will.

The above table is principally applicable for strictly gymnasium work.

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TO TAKE INTERVALS.

Matters bearing on the position of the soldier, formation of company, etc., are as laid down in Drill Regulations, United States Army. Preparatory commands are in italic, commands of execution in small capitals. One pace is thirty inches. Intervals and distances of two paces are prescribed. If more interval or distance is required, the instructor will caution the men beforehand as to the number of paces to be taken. As a rule, a little more than two paces—say two and a half paces—will be required; but the idea is to keep the men in as small a space as possible, as more can then be exercised and receive proper supervision. Before taking intervals the guides are directed to fall in the line of file closers. If at order arms, when intervals are taken, or assembly ordered, the piece is carried at the trail. Intervals may be taken or assembly made in quick and double time and at a run.

Being in line at a halt: *Right take intervals*; MARCH. At the first command rear rank and file closers step back two paces; at the command *march*, all face to the right except the left file and left file closer, and, after gaining intervals of two paces, face to the original front.

Left (or right) assemble; MARCH. At the command *march*, the men close in to the left, and at the same time close ranks.

Being in line, moving: *Right (or left) take intervals*; MARCH. At first command rear rank and file closers halt; at *march*, given when front rank has gained two paces, left man of front rank halts, left man of rear rank and left file closer stand fast; all

other men gain intervals to right and face to original front.

Being in column of fours at a halt: *Right* (or *left*) *take intervals*; 2. MARCH. At first command front rank of leading four steps off, followed at distance of two paces by rear rank, and so on throughout the column; at the command *march*, given when all have attained proper distance, left files halt, others gain intervals to the right and face to original front. (If executed away from file closers, they and left files both stand fast at command *march*.)

Left (or *right*) *assemble*; MARCH. Men close to the left at command *march*, and at the same time close to proper distance between fours.

Being in column of fours moving: *Right* (or *left*) *take intervals*; 2. MARCH. At first command front rank of leading four continues the march, other fours mark time and step off when they have gained the proper distance; at the command *march*, given when all have attained proper distance, left files halt, others gain intervals to the right and face to original front. (If executed away from file closers, they and left files both stand fast at command *march*.)

GENERAL RULES.

At command *halt* in any exercise the starting position, *ready*, is resumed.

To continue any exercise, either by or without numbers, preface the command with *Continue the exercise*.

CADENCE.

Every set of exercises of the rifle, bar-bell, dumb-bell drills and calisthenics can be used with either set of music. Each set has five exercises, which are

so repeated that all take thirty-two counts except the third, which requires sixteen. After the details of each exercise are learned, the men in executing them will be required to count one, two, etc., up to eight, inclusive, in a full, loud tone of voice, so as to obtain unison; then each set will be gone through without pause, the instructor signaling or cautioning the men when the succeeding exercise commences. After one or two trials with music, there will be no difficulty about the time. It will be seen that the nature of some of the exercises of a set will require faster time than the corresponding exercises of another set. This is easily remedied by the instructor, who can signal the leader of the music to go fast or slow.

RIFLE DRILL.



FIG. 1.

Being at order arms, at command *ready*, come to *port arms*; 2. Drop rifle to horizontal position in front of body, right hand at small of stock, left hand just above lower band, arms extended downward, knuckles front, barrel of rifle up, Fig. 1. If using carbine, take similar position.

Being at *ready*, at command *order arms*, come to *port arms* and then to or-

der as prescribed in Drill Regulations.

The following exercises are executed from the position of *ready* :

FIRST SET.

First, EXERCISE.—
At command *exercise*, raise rifle smartly to chest, two inches below chin, elbows close to sides, wrists well bent back, Fig. 2.



FIG. 2.

2. Lunge well out to left oblique, left foot leading, at same time extend rifle forward, barrel to rear, Fig. 3.



FIG. 3.



FIG. 4.

3. Carry rifle to chest, wrists bent back, Fig. 4.



FIG. 5.

4. Turn to right-about on heels, Fig. 5.

5. Extend rifle forward.

6. Carry rifle to chest, Fig. 5.

7. Carry left foot to right, and face to original front, Fig 2.

8. Drop rifle to *ready*.

Take exercise four times. In all lunging, the rear foot remains flat on the ground, leg well straightened out.

Second, EXERCISE.

--At command *exercise*, bend trunk forward, legs remaining straight, and, if possible, touch ground with rifle, Fig. 6.



FIG. 6.

2. Swing rifle well out to front and overhead, arms and legs remaining straight, wrists bent well back, eyes on rifle, back hollowed, Fig. 7.

3. Swing rifle down, and bend trunk forward to position as at command *exercise*, Fig. 6.

4. Same as 2, Fig. 7.



FIG. 7.



FIG. 8.

5. Drop rifle to shoulders behind neck, forcing chest well forward, eyes directed to the front, Fig. 8.

6. Resume position 2, Fig. 7.

7. Drop rifle to chest, Fig. 2.

8. Drop rifle to *ready*.

Take exercise four times. The first four movements are executed slowly, the last four rapidly.



FIG. 9.

Third, EXERCISE.
—At command *exercise*, carry left foot about fifteen inches to the left, turn body to the left on hips, rising well upon right toe, left foot flat on ground, and swing rifle to left to horizontal position overhead, back hollowed, wrists well bent back, eyes on rifle, Fig. 9.

2. Swing rifle down across body and overhead to right, arms remaining straight, the reverse position of first movement.

Repeat to include sixteenth count.

At command *halt*, come to *ready*.

Fourth, EXERCISE.—At command *exercise*, lunge directly to the left, left foot being planted about thirty-six inches to the left; at same time swing rifle overhead, arms remaining extended, wrists bent well back, back hollowed, eyes on rifle, Fig. 10.

2. Resume *ready*.

3. Lunge directly to the front, left foot leading, and take position above described.

4. Resume *ready*.

5. Lunge directly to the right, right foot leading, and take position as above.

6. Resume *ready*.

7. Lunge directly to the front, right foot leading, and take position as above.

8. Resume *ready*.

Take exercise four times. In lunging, the leading foot should not be planted so as to jar. When the exercise is understood so as to be executed in cadence, the foot should lightly strike the ground so as to enable a quick return to the *ready*.

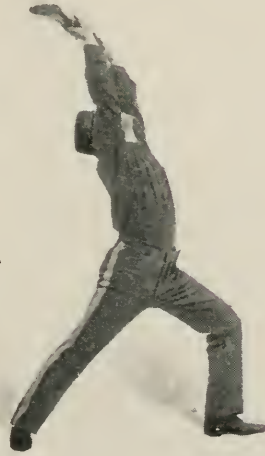


FIG. 10.

Fifth, EXERCISE.—Same as first exercise, substituting words “right” for “left” and “left” for “right.”

Take exercise four times.

In executing the exercises one after the other they commence at the *ready*, except the fourth. In this the lunge to the left is made directly from the overhead position on the right, of the third exercise—i. e., by swinging the rifle down across the body and overhead on left side, and lunging out with left foot.

SECOND SET.

First, EXERCISE.—Same as first exercise, first set.

Second, EXERCISE.—At command *exercise*, carry left foot about twenty-four inches to the front and pointing to the front, both feet flat on ground; at same time bend trunk forward, and bring rifle down to left toe, Fig. 11.



FIG. 11.

2. Replace left foot by right, swing rifle overhead, arms remaining straight, and take position 2 in second exercise, first set, Fig. 7.

3. Advance right foot, bend trunk forward, swing rifle down to right toe, arms remaining straight.

4. Replace right foot by the left, and take position 2, Fig. 7.

5. Drop rifle to shoulders behind neck, Fig. 8.

6. Extend upward, Fig. 7.

7. Drop to chest, Fig. 2.

8. Come to *ready*.

Take exercise four times.

Third, EXERCISE.

—At command *exercise*, carry left foot about fifteen inches to the rear, turn body to left rear on hips, rising well upon right toe, left foot flat on ground, and swing rifle to horizontal position overhead, back hollowed, wrists bent well back, eyes on rifle, Fig. 12.

2. Swing rifle down across body to the front to horizontal position overhead, at same time carry left foot about fifteen inches in front



FIG. 12.

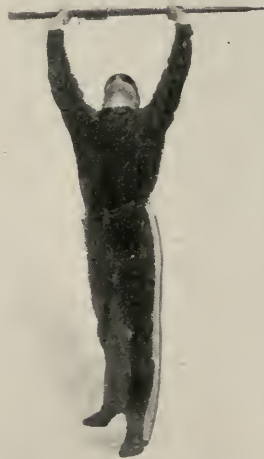


FIG. 13.



FIG. 14.

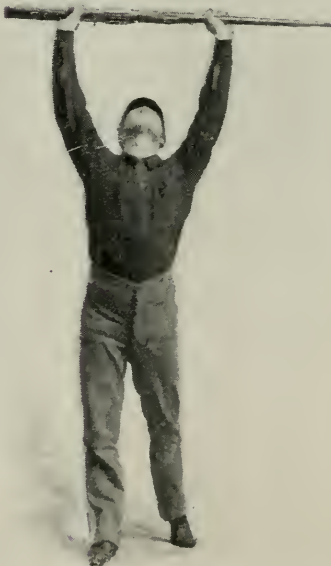


FIG. 15.

of right, and now, facing to the front and rising well upon right toe, take position similar to that of first movement, Fig. 13.

3. Swing rifle down across body and overhead to rear, rising well on left toe, Fig. 14.

4. Swing rifle down and overhead and carry right foot about fifteen inches to the front, rising well on left toe, Fig. 15.

Repeat the above four movements to include sixteenth count. At command *halt*, come to *ready*.

It will be seen that this exercise is similar to the third exercise, first set. The body is turned to rear and front, instead of to left and right, and a step is taken to the front each time the rifle is swung to the front.

In executing these exercises one after the other, the third exercise ends at the sixteenth count, Fig. 15, and the fourth exercise commences by making the lunge from this position.

Fourth, EXERCISE.
—At command *exercise*, lunge well out to left and extend rifle to the left at height of chin in a horizontal position, barrel up, left arm extended, eyes on muzzle, Fig 16.

2. Resume *ready*.

3. Lunge to right in similar manner, right arm extended, eyes on butt, Fig. 17.

4. Repeat the above to include sixteenth count.



FIG. 16.



FIG. 17.



FIG. 18.

17. Lunge to left as before, except carrying rifle behind head, Fig. 18.

18. Resume *ready*.

19. Lunge to right, carrying rifle behind head.

20. Resume *ready*.

Repeat to include thirty-second count.

NOTE.—Figs. 16, 17, and 18, head and eyes should be turned in direction of the lunge.

Fifth, EXERCISE.—Same as fifth exercise, first set.

DOUBLE RIFLE DRILL.

Close rear rank to one pace. At command *ready*, rear-rank man passes his rifle to left side and drops muzzle forward; front rank passes butt of his rifle to rear, front rank grasps rifles just below upper bands, rear rank at small of stocks, Fig. 19.

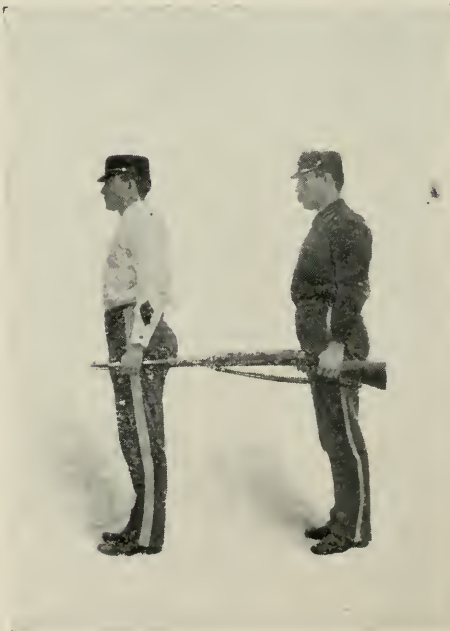


FIG. 19.

File closers act together.

NOTE. — Front rank shown in light shirt in all double exercises.

The following exercises are executed from the *ready*.

First, EXERCISE. — At command *exercise*, raise rifles under shoulders, knuckles down, elbows out, barrels outward, Fig. 20.

2. Both lunge forward with the left foot, at same time extending rifles side-wise, barrels now inward, Fig. 21.

3. Resume 1, Fig. 20.

4. Resume *ready*.

5. Resume 1, Fig. 20.

6. Both lunge backward with right foot, extending rifles sidewise as before, Fig. 21.

7. Resume 1, Fig. 20.

8. Resume *ready*.
Take exercise four



FIG. 20.



FIG. 21.



FIG. 22.

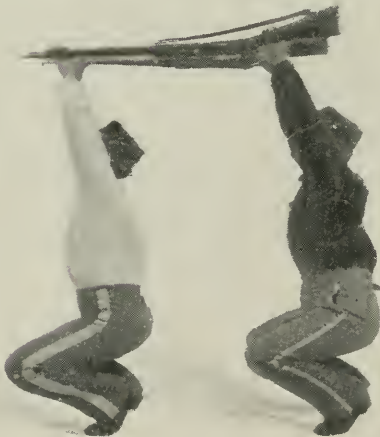


FIG. 23.

times. In lunging to rear, position of legs is the same as in lunging to front.

Second, EXERCISE.
—At command *exercise*, both bend trunks to left, lowering rifle on left side, raising it overhead on right side, arms extended, eyes on hands overhead, right wrists bent well back, Fig. 22.

2. Bend to opposite side, reversing position of rifles, eyes on hands overhead.

3. Resume 1, Fig. 22.

4. Resume 2.

5. Swing rifles as in 1, Fig. 22, but keep bodies erect.

6. Swing as in 2, bodies erect.

7. Same as 5.

8. Resume *ready*.

Take exercise four times. First four movements are executed slowly, the last four rapidly.

Third, EXERCISE.—At command *exercise*, come to knees full bend, at same time throw rifles sidewise overhead, arms remaining extended, backs of hands inward, eyes on hands, Fig. 23.

2. Resume *ready*.

Repeat to include sixteenth count.

Fourth, EXERCISE.

—At command *exercise*, both lunge to left and throw rifle on left side overhead, left wrists bent well back, eyes on hands overhead, rifle on right side remaining at side, Fig. 24.

2. Resume *ready*.

3. Lunge to right side, taking position reverse of 1—i. e., rifle on right side overhead, rifle on left side at side.

4. Resume *ready*.

Repeat to include thirty-second count.

Fifth, EXERCISE.—Same as first, substituting “left foot” for “right” and “right foot” for “left.”



FIG. 24.

TWO MEN WITH ONE RIFLE.

Ranks being closed to one pace, face front rank about, front rank being at *order arms*, rear rank without rifle.

At command *ready*, front-rank man comes to *ready* as before described, rear-rank man places his



FIG. 25.



FIG. 26.

hands to his left of those of front rank, Fig. 25. In the following exercises, directions right and left refer to right and left of front rank as it faces in the drill. File closers act together.

The following exercises are executed from *ready*:

First, EXERCISE. —At command *exercise*, raise rifle upward to full extent of the arms, eyes on rifle, Fig. 26.

2. Front rank lunges forward with left foot, rear rank backward with right, eyes on rifle, arms extended, back of rear rank hollowed, wrists bent well back, Fig. 27.

3. Resume 1, Fig. 26.

4. Resume *ready*.

5. Resume 1, Fig. 26.

6. Rear rank lunges forward with

left foot, front rank backward with right, eyes on rifle, arms extended, back of front rank hollowed, wrists bent well back.

7. Resume 1.

8. Resume *ready*.

Take exercise four times. In lunging to the rear the position of legs is the same as in lunging to the front.



FIG. 27.

Second, EXERCISE.

—At command *exercise*, bend trunks well to the left, carrying rifle to vertical position on left side, arms straight, eyes on butt, Fig. 28.

2. Bend to opposite side, take corresponding position, eyes on muzzle.

3. Resume 1, Fig. 28.

4. Resume 2.



FIG. 28.



FIG. 29.

5. Twist rifle to left, arms straight, bodies now erect, Fig. 29.

6. Twist rifles to right, bodies erect.

7. Resume 5.

8. Resume *ready*.

Take exercise four times. The first four movements are executed slowly, the last four rapidly.



FIG. 30.

Third, EXERCISE.

—At command *exercise*, come to knees full bend, arms raised overhead and extended, eyes on rifle, Fig. 30.

2. Resume *ready*.

Repeat to include sixteenth count.

Fourth, EXERCISE.

—At command *exercise*, lunge to left,

extending rifle to horizontal position at height of chin, head and eyes to left, Fig. 31.

2. Resume *ready*.

3. Lunge to right and extend rifle in horizontal position, head and eyes to the right.

4. Resume *ready*.

Repeat to include sixteenth count.

17. Lunge as before to left, except throw butt up until the piece is vertical, eyes on butt of piece, Fig. 32.

18. Resume *ready*.

19. Lunge to right, throwing muzzle up until piece is vertical, eyes on muzzle.

Repeat to include thirty-second count.

Fifth, EXERCISE.

—Same as first, substituting “left foot” for “right” and “right foot” for “left.”



FIG. 31.



FIG. 32.

BAR-BELL DRILL.



FIG. 1.

The bar bell is a wand of wood, of various lengths; the size recommended for these exercises is about five feet in length and one and a half inch in diameter, with either iron or wooden knobs at the ends; ordinary poles can be used in place of the bar bell.

Position of *carry bar*, Fig. 1; right hand is about one foot from lower end of bar; in double

timing, the bar is carried at a *port*.

Being at carry, at command *ready*, raise left hand to bar at height of forehead, carry bar across body to horizontal position, hands about three feet apart, knuckles front, Fig. 2.



FIG. 2.

The following exercises are executed from *ready*:

First, EXERCISE. —At command *exercise*, carry bar to vertical position on right side, left forearm against forehead, right arm extended, Fig. 3.



FIG. 3.





FIG. 4.

2. Lunge directly to left, at same time extending bar in horizontal position to left at height of chin, left arm straight, eyes directed to left, Fig. 4.

3. Resume 1, Fig. 3.

4. Resume *ready*.

5. Raise bar to vertical position on left side.

6. Lunge to right in similar manner as to left.

7. Resume 5.

8. Resume *ready*.

Take exercise four times.



FIG. 5.

Second, EXERCISE.
—At command *exercise*, bend trunk forward, legs straight, and, if possible, touch ground with bar, Fig. 5.

2. Swing bar well out to front and overhead, arms and legs remaining straight, wrists bent well back, eyes on bar, back hollowed, Fig. 6.

3. Swing bar and bend trunk down to position 1, Fig. 5.

4. Resume 2, Fig. 6.

5. Swing bar down behind back, arms straight, hands slipping toward ends of bar, Fig. 7.

6. Swing to position in front of body, arms remaining straight.

7. Resume 5, arms remaining straight, Fig. 7.

8. Same as 6, slipping hands to *ready* in bringing bar in front of body.

Take exercise four times.



FIG. 6.



FIG. 7.



FIG. 8.



FIG. 9.

Third, EXERCISE.
—At command *exercise*, come to knees full bend, at same time throw bar overhead, arms extended, wrists bent well back, eyes on bar, Fig. 8.

2. Resume *ready*.

Repeat to include sixteenth count.

Fourth, EXERCISE.
—At command *exercise*, hop to straddle position, at same time swing bar overhead, arms extended, wrists bent well back, eyes on bar, Fig. 9.

2. Hop to *ready*.

Repeat to include thirty-second count.

Fifth, EXERCISE.— Same as first exercise, except that in lunging the bar is carried to horizontal position behind head.

The rifle drill can be used with the bar bell.

DUMB-BELL.

The dumb-bells should weigh about two or three pounds each. Position of *ready*, Fig. 1; in double timing, bells are carried at thrust, knuckles out, Fig. 7.



FIG. 1.



FIG. 2.

The following exercises are executed from *ready* :

FIRST SET.

This is similar to first set, single rifle drill.

First, EXERCISE.— At command *exercise*, raise arms to thrust, forearms horizontal, elbows against sides, knuckles down, shoulders well back, Fig. 2.



FIG. 3.

2. Lunge to left oblique, extend arms, turning knuckles up, Fig. 3.

3. Without changing position of legs bring arms to thrust, Fig. 4.

4. Turn to right-about on heels.

5. Extend arms forward, knuckles up.

6. Without moving legs bring arms to thrust.

7. Carry left foot to right and face to original front.

8. Resume *ready*.

Take exercise four times.



FIG. 4.

Second, EXERCISE.
—At command *exercise*, bend trunk forward, knuckles outward, arms and legs straight, and touch ground in front of toes if possible, Fig. 5.



FIG. 5.



FIG. 6.

2. Swing arms extended to front and overhead, back hollowed, eyes on bells, Fig. 6.

3. Bend forward to 1, Fig. 5.

4. Same as 2, Fig. 6.



FIG. 7.

5. Drop bells to chest, Fig. 7.

6. Extend arms upward, eyes on bells, Fig. 6.

7. Resume 5.

8. Resume *ready*.

Take exercise four times. Knuckles outward throughout exercise.

Third, EXERCISE.

—At command *exercise*, come to knees full bend and thrust arms forward, knuckles up, Fig. 8.

2. Rise, bringing arms to thrust, Fig. 2.

Repeat to include eighth count.



FIG. 8.

9. Come to knees full bend and thrust arms sideward, the knuckles up, Fig. 9.

10. Rise, bringing arms to thrust.

Repeat to include sixteenth count.

On sixteenth count come to *ready* in rising.



FIG. 9.

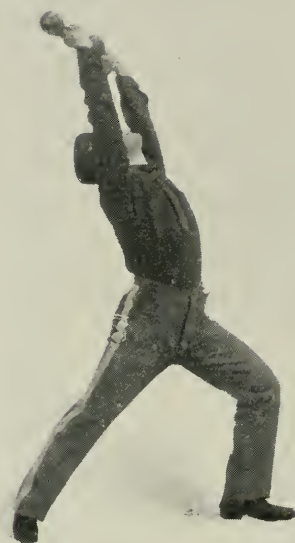


FIG. 10.



FIG. 11.

Fourth, EXERCISE.
—At command *exercise*, lunge to left, throwing arms overhead, knuckles to the rear, eyes on bells, Fig. 10.

2. Come to *ready*, Fig. 1.

3. Lunge to left front similarly.

4. Resume *ready*.

5. Lunge to right similarly.

6. Resume *ready*.

7. Lunge to right front similarly.

8. Resume *ready*.

Take exercise four times.

Fifth, EXERCISE.—Same as first exercise, substituting “left” for “right” and “right” for “left.”

SECOND SET.

First, EXERCISE.—At command *exercise*, raise arms to thrust, knuckles outward, forearms horizontal, elbows against sides, Fig. 7.

2. Lunge directly

to front with left foot, striking out with left arm, throwing body with blow, Fig. 11.

3. Without changing position of legs bring left arm back to thrust and strike out with right arm, throwing right side of body forward, Fig. 12.

4. Bring back right arm and strike out with left.

5. Bring back left and strike out with right.

6. Bring right arm to thrust.

7. Carry left foot to right.

8. Come to *ready*.

Take exercise four times.

Second, EXERCISE.
—At command *exercise*, carry left foot about twenty - four inches to the front, both feet flat on ground, bend trunk forward and bring bells down to front of left toe, knuckles outward, Fig. 13.



FIG. 12.



FIG. 13.



FIG. 14.



FIG. 15.

2. Replace left foot by right, swing bells overhead, arms straight, back hollowed, eyes on bells, Fig. 6.

3. Advance right foot, bend trunk forward, swing bells down in front of right toe.

4. Replace right foot by left, swing bells overhead as before, Fig. 6.

5, 6, 7 and 8. Same as 5, 6, 7 and 8, second exercise, first set, dumb-bells.

Take exercise four times. Knuckles outward throughout the exercise.

Third, EXERCISE.—At command *exercise*, carry left foot well out to left, carry left bell to floor on outside of left foot, raise right arm overhead, eyes on right bell, both feet flat on ground, Fig. 14.

2. Straighten left leg, bend right well

and swing right bell to outside right foot, left arm overhead and vertical, eyes on left bell.

Repeat to include fifteenth count.

16. Come to *ready*.

Fourth, EXERCISE.—At command *exercise*, carry arms forward and swing to rear at height of shoulders, arms remaining straight, knuckles down, at same time lunge to left, Fig. 15.

2. Come to *ready*.

3. Lunge to left front, swinging arms as before.

4. Come to *ready*.

5. Lunge to right, arms as before.

6. Come to *ready*.

7. To right front, arms as before.

8. Come to *ready*.

Take exercise four times.

Fifth, EXERCISE.

—At command *exercise*, raise arms to thrust, knuckles down, Fig. 2.

2. Lunge to left, extending arms sidewise, knuckles up.

3. Carry left foot to right, arms to thrust, Fig. 2.

4. Come to *ready*.

5. Raise arms to thrust, Fig. 2.

6. Lunge to right, extending arms sidewise, knuckles up, Fig. 16.

7. Carry right foot to left, arms to thrust.

8. Come to *ready*. Take exercise four times.



FIG. 16.

CALISTHENICS.

Being at *attention*.

FIRST SET.

First, EXERCISE.—At command *exercise*, raise arms to thrust, knuckles outward.

2. Lunge directly to front, left foot leading, and strike out well with left arm, throwing body with blow, Fig. 1.



FIG. 1.

3. Bring left arm back to thrust and strike out with right, throwing right side of body forward.

4. Bring right arm back and strike out with left.

5. Bring left back and strike out with right.

6. Bring right arm back to thrust.

7. Carry left foot to right.

8. Drop arms to sides.

Take exercise four times.

(This is the same as first exercise, second set, of dumbbells.)

Second, EXERCISE.

—At command *exercise*, bend trunk forward, arms and legs straight, backs of hands to front, and touch floor in front of toes, Fig. 2.

2. Bend trunk upward and backward, throwing arms overhead, arms straight, eyes on hands, backs of hands to rear, back hollowed.

3. Bend down to position 1, Fig. 2.

4. Same as 2.

5. Swing arms to side position, knuckles up, Fig. 3.



FIG. 2.



FIG. 3.



FIG. 4.

6. Swing arms forward, knuckles up, Fig. 4.

7. Swing to side position, Fig. 3.

8. Drop arms to sides.

Take exercise four times. In swinging, muscles should be rigid and arms swung smartly. The first four movements are executed slowly, the last four rapidly.



FIG. 5.

Third, EXERCISE.
—At command *exercise*, come to knees full bend, hands on floor in front of toes, Fig. 5.

2. Carry feet backward to the leaning rest, resting on toes and hands, body straight, head up, eyes to the front, Fig. 6.



FIG. 6.

3. Bend arms downward until body nearly touches floor, Fig. 7.

4. Straighten arms, Fig. 6.

5. Bend arms, Fig. 7.

6. Straighten arms.

7. Bring feet up to hands as in position 1, Fig. 5.

8. Rise to *attention*.

Take exercise twice.



FIG. 7.



FIG. 8.

Fourth, EXERCISE.
—At command *exercise*, hop to straddle position and swing arms sidewise and overhead, knuckles inward, eyes on hands, Fig. 8.

2. Hop to *attention*.

Repeat to include thirty-second count.



FIG. 9.

Fifth, EXERCISE.
—At command *exercise*, raise arms to thrust, knuckles down, Fig. 9.

2. Lunge to left, thrusting arms side-wise, knuckles up, Fig. 10.

3. Resume 1, Fig. 9.

4. Resume *attention*.

5. Resume 1.

6. Lunge to right, thrusting arms side-wise, knuckles up.

7. Resume 1.

8. Resume *attention*.

Take exercise four times.

(Same as fifth exercise, second set, dumb-bell.)

SECOND SET.

At command *lie down*, come to knees full bend, sit on floor and lie down, hands clasped in rear of head, legs together, Fig. 11.



FIG. 10.



FIG. 11.



FIG. 12.

The following exercises are executed from lying-down position:

First, EXERCISE.

—At command *exercise*, strike upward with both arms, arms vertical, hands clinched, backs of hands toward feet, Fig. 12.

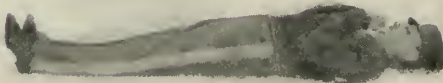


FIG. 13.

2. Flex the arms, arms now raised from floor, Fig. 13.

Repeat to include thirty-second count; on thirty-second count bring hands in rear of head.

Second, EXERCISE.

—At command *exercise*, raise feet about twenty-four inches from floor, legs straight, toes pointing outward, muscles set, Fig. 14.

2. Lower feet to floor.

3. Same as 1.

4. Same as 2.

5. Same as 1.



FIG. 14.

6. Bend legs until upper leg and fore leg make a right angle, Fig. 15.

7. Extend legs, Fig. 14.

8. Lower legs to floor.

Take exercise four times.

The first four movements are executed slowly, the last four rapidly.



FIG. 15.



FIG. 16.



FIG. 17.

Third, EXERCISE.
—At command *exercise*, raise trunk and bring it well forward, legs remaining on floor, Fig. 16.

2. Lower trunk to floor.

Repeat to include sixteenth count.

Executed slowly.

This exercise being somewhat difficult at first, it may be executed with hands on hips, thumbs to the rear, the hands being placed on hips at command *exercise* and replaced behind head on last count.

Fourth, EXERCISE.
—At command *exercise*, bring left leg well up, upper leg at right angles to trunk, fore leg parallel to floor, toe pointed forward and outward, at same time raise right leg slightly from floor, leg remaining straight, Fig. 17.

2. Extend left leg and bring up right, reversing position of legs; semblance of running, lying down.

Repeat to include thirty-first count.

On thirty-second count, extend left leg and place both legs on floor.

Fifth, EXERCISE.
—At command *exercise*, strike out with left arm, knuckles toward floor, both hands clinched and arms elevated from floor several inches, at same time turn head and eyes to left, Fig. 18.

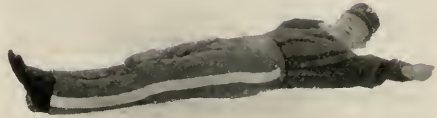


FIG. 18.

2. Flex left arm, strike out with right, head turning to right.

Repeat to include thirty-first count.

On thirty-second count, flex left arm and take the position with hands behind head.

EXERCISES FOR IMPROVING CARRIAGE.

Being at *attention*.

Hands backward, CLASP.—At command *clasp*, clasp hands back of body, right hand clasping thumb of left, left hand next the body.

Head forward and backward, MOVE.—At command *move*, push head well forward, the chin being neither elevated nor depressed, shoulders remaining in place, Fig. 19.



FIG. 19.



FIG. 20.

2. Draw head well back and chin in, forcing head and neck well back, Fig. 20.

Hands being clasped backward.

Shoulders forward and backward, MOVE.—At command *move*, roll the shoulders well forward, head remaining erect.

2. Roll shoulders well back, chest thrown well out, stomach drawn in, head erect.

Being at *attention*.

Arms sidewise, RAISE.—At command *raise*, arms are raised sidewise, knuckles up, Fig. 3.

Backward, CIRCLE.—At command *circle*, arms describe a small circle backward, not being allowed to drop below the shoulders or to come in front of shoulders.

JUMPING.

Forward jump, JUMP.—At first command bring hands to horizontal position forward, backs of hands up, knees slightly bent, making ready for the spring; at *jump*, swing arms to rear and then forward, jumping well forward, strike the floor lightly, and resume position *attention*.

Upward jump, JUMP.—Similarly executed, the jump being made in place without gaining ground.

Backward jump, JUMP.—At first command bring arms forward and bend knees slightly as before; at *jump*, swing arms to rear, at same time springing backward, striking floor lightly.

Hop, step, and jump, JUMP.—Executed by hopping from either foot, stepping on the other, and ending with the jump. Successive jumps may be made by prefacing the command by the number of jumps—as two or three jumps. In the same way the upward jump may be made with the left or right face, left- or right-about, or complete turn.

MEN VAULTING OVER ONE ANOTHER.

Rear (or Front) rank prepare to vault, VAULT.—At first command front rank takes position with legs separated about twenty inches, knees bent, left foot slightly in advance, hands on knees, head down, shoulders well braced; at *vault*, rear rank takes short run, jumps from both feet, places hands on shoulders of front rank, and vaults over, striking floor lightly. After the men are proficient in this vaulting the man who is vaulted over may take the position with the body erect, arms folded, head down, legs separated as before, but straight.

File closers act together in this exercise.

COCKFIGHT.

Games similar to the cockfight may be occasionally indulged in for the amusement of the men, all of the men under instruction being divided into two ranks, with intervals, and ranks facing one another about fifteen paces distant.

On right (or left) foot, prepare to hop, HOP.—At first command the men raise left leg and fold the arms; at *hop*, they hop forward on right foot and endeavor to knock any of their opponents down, or force them to touch the floor with the raised foot by butting with the shoulder. As soon as any man touches the floor with raised foot or is knocked down he must immediately return to his starting place. After a minute or two of the exercise the command *halt* is given and all return to the starting place. The command for hopping on the other foot is then given, and all hop forward who have not been forced to touch the floor with raised foot. This exercise of hopping forward is continued until all on one side have been forced to retire. Any number of men on one side may go after any number on the other.

CARRYING THE WOUNDED.

Men should be exercised in carrying the wounded, following the two methods prescribed in the Drill Regulations for the Hospital Corps for carrying patients across back and across shoulder.

One rank should lie down and be limp; file closers act together.

Front (or rear) rank, across back, prepare to carry, CARRY.—At first command the wounded man is lifted

to the erect position ; at *carry* he is placed across the back as described.

Front (or rear) rank, across shoulder, prepare to carry, CARRY.—Similarly executed, carrying wounded man across shoulder.

The men will be practiced in carrying the wounded, in quick and double time and at a run, and also, when the wounded is across the shoulder, in carrying the rifle, as one hand is then free.

INDIAN CLUBS.

Indian clubs exercise the arms and upper portions of the body; the lower part should remain quiet during the exercise.

The clubs should weigh three or four pounds each, not more.

Nearly all of the large and small circles are given below. Club swinging is simply a combination of these various circles. The circles should be given with one arm at a time, both together, and alternating, and then combinations made. The instructor will work out simple combinations. Let each movement be executed a designated number of times, say four, changing from one movement to another without pause. The instructor will explain to the men when and how the change is made.

After proficiency in certain combinations is attained the swinging may be done to music. Almost any waltz music can be used.

As there can be an almost infinite number of combinations, it has not been deemed advisable to go into this subject in detail, as the value of the exercise is not commensurate with the space necessary, and detailed descriptions would tend to confuse. Most officers have a good general knowledge of club swinging.

The clubs should be grasped lightly, and not held rigid in the hands.

The forward and backward circles are in a plane perpendicular to the body, the oblique at an angle of forty-five degrees, and all others parallel. In swinging in an oblique direction the body simply turns on the hips in that direction.

Clubs being held at the sides, at command *ready* they are raised to a vertical position, hands at the height of the shoulders, knuckles front; *ready* is the starting position, Fig. 1.

Clubs, DOWN.—At command *down*, drop clubs to sides.

In double timing, the clubs are held at *ready*.

When the men are cautioned to continue the exercise the circles are then made complete and without pause.

While learning the circles with one arm let the other hang at the side. The circles are shown using the right arm only.



FIG. 1.



FIG. 2.



FIG. 3.

LARGE CIRCLES.

Outward circle,
Fig. 2.

Inward circle, the
reverse.

Forward circle,
Fig. 3.

Backward circle,
the reverse.

Right oblique forward circle, Fig. 4.

Right oblique backward circle, the reverse.

Left oblique forward circle, explains itself.

Left oblique backward circle, the reverse.



FIG. 4.

SMALL CIRCLES.

With Arms Bent.

Behind shoulders, outward circle, Fig. 5.

Behind shoulders, inward circle, the reverse.



FIG. 5.



FIG. 6.

Side forward circle, Fig. 6.

Side backward circle, the reverse.

Overhead circle, Fig. 7.



FIG. 7.

*Arms Extended
Downward.—Wrist
Circles.*

Front outward circle, Fig. 8.

Front inward circle, the reverse.

Back outward circle, Fig. 9.

Back inward circle, the reverse.



FIG. 8.



FIG. 9.

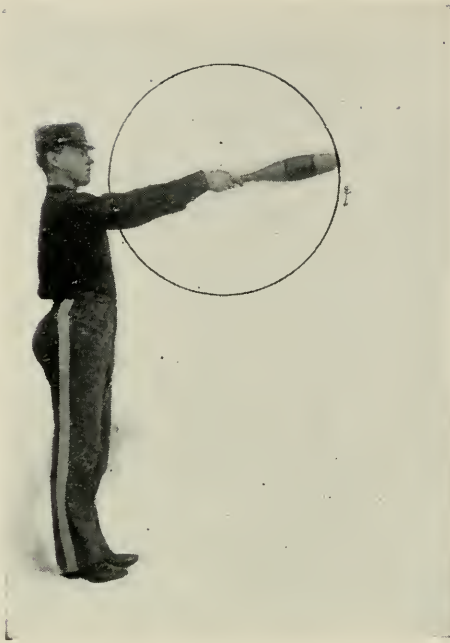


FIG. 10.

Arms Extended Forward.—Wrist Circles.

Forward outside circle, Fig. 10.

Backward outside circle, the reverse.

Forward inside circle.

Backward inside circle, the reverse.

Upper horizontal outward circle, Fig. 11.

Upper horizontal inward circle, the reverse.

Lower horizontal outward circle.

Lower horizontal inward circle, the reverse.

These last wrist circles may be made with the arms extended sidewise.



FIG. 11.

MEDICINE BALL.

The medicine ball is round, about one foot in diameter, filled with hair or some soft material, covered with leather, and weighs from four to seven pounds.

At attention, at a halt or moving, ball is carried under right arm; at command *ready*, the left foot is carried about eighteen inches to the left—the straddle position—legs straight, feet flat on ground; each man having a ball carries it in front of body, both hands holding ball, arms straight.

In most of the exercises the legs remain straight and feet flat on ground, the body turning on the hips.

After learning the following exercises they will be executed rapidly without the numbers; rapidity is important in this drill.

EXERCISES.

One Ball to Every Two Men.

Men are formed in two ranks facing one another, with intervals of about two paces and distance of about three, each front-rank man with a ball. File closers act together on the flanks.

Take position *ready*.



FIG. 1.



FIG. 2.

Right (or left) shoulder, PASS.—At first command front rank carries ball to right shoulder, right arm close to side, left hand in front of ball, body turning on hips, Fig. 1; at *pass*, ball is pushed with right arm to right shoulder of rear rank.

2. Rear rank returns ball similarly to right shoulder of front rank.

Right to left shoulder, PASS (or, Left to right shoulder, PASS).—At first command ball is carried to right shoulder; at *pass* is pushed to the left shoulder of rear rank, who carries it across body to right shoulder.

2. Ball is pushed to left shoulder of front rank, who carries it to right shoulder.

Right (or left) side, PASS.—At first command ball is carried to right side, under

right arm, body turning on hips, Fig. 2; at *pass*, ball is curled to right side of rear rank, who catches it with right arm.

2. Ball is curled to right side of front rank.

Right to left side, PASS (or, *Left to right side, PASS*).—At first command ball is carried to right side; at *pass* it is curled to left side of rear rank, who catches it with left arm and carries it across body to right arm.

2. Ball is curled to left side of front rank, who carries it to right side.

Right (or left) toe, ROLL.—At first command ball is carried to right side; at *roll* it is rolled on floor to right toe of rear rank, who snaps it up with the toe and catches it with right arm.



FIG. 3.

2. Ball is rolled to right toe of front rank, who snaps up ball as above described.

Right side to left toe, ROLL (or, *Left side to right toe, ROLL*).—Explains itself—namely, ball rolled to left toe, snapped up, caught in left arm, passed to right, rolled to left toe of front rank, etc.

Overhead, PASS.—At first command ball is carried overhead, arms straight, back hollowed, eyes on ball, Fig. 3; at *pass*, ball is thrown parallel to floor to rear rank, so that it is caught in overhead position

2. Ball is returned to front rank similarly.

Between legs, PASS.—At first command ball is carried between legs, legs straight, Fig. 4; at *pass*, ball is thrown parallel to floor to rear rank, who catches ball between legs.

2. Ball is returned to front rank similarly.

Overhead and between legs, PASS.—At first command ball is carried to overhead position; at *pass* it is thrown to overhead of rank, who swings it down between legs.

2. Ball is thrown to between legs of front rank, who swings it to overhead position.

Between legs and overhead, PASS.—Similarly executed.

Close ranks to one pace, facing one another.

Head, PASS.—At first command ball is raised to height of

forehead; at *pass*, ball is patted back and forth between front and rear ranks.

Ball is not caught in this exercise.

Face front rank about.

Overhead, PASS.—At *pass*, ball is dropped overhead to rear rank, who rolls it on floor between legs of front rank; front rank picks up ball and drops it overhead, etc. Legs remain nearly straight.

Face ranks about and give same exercise.



FIG. 4.



One Ball to Each Man.

Ranks facing one another at intervals of two and distance of three paces.

Right to left shoulder, PASS (or, *Left to right shoulder, PASS*).—At first command balls are carried to right shoulders; at *pass* they are pushed to left shoulders and carried across bodies to right shoulders.

2. Pushed to left shoulders and carried to right.

Right to left side, PASS (or, *Left to right side, PASS*).—Explains itself from what is given above.

Overhead and between legs, PASS.—At first command front rank carries ball overhead, rear rank between legs; at *pass*, front rank throws ball to overhead of rear rank, who swings ball down between legs, rear rank throws to between legs of front rank, who swings ball overhead, etc.

Between legs and overhead, PASS.—Similarly executed.

Face front rank about and close to one pace.

Overhead, PASS.—Similar to that for one ball. Rear rank rolls his balls between legs of front rank as front rank drops his balls overhead.

Each man having a ball, or every two having one, and with same intervals and distance and moving at a quick or double time, or at a run, forward, to the rear or by the flank, at the command *PASS*, the balls are passed between each front and rear rank man, the balls being thrown and caught in any convenient manner.

Being formed in a circle, facing inward or outward, with about five paces intervals.

Right (or *left*), *PASS*.—Balls are passed around circle.

Same exercise sitting on floor.

RUNNING.

The drill in running will first be without arms or accouterments ; after some practice the piece may be added, being carried in different positions.

Running with the knapsack or a heavy load will be but rarely indulged in. The men will be taught to run entirely on the ball of the foot, striking the ground lightly and thus acquiring a graceful and springy step, the ball of the foot being a natural springboard. Never allow running on the flat foot ; it is a heavy and awkward way of running, and on rough ground sprained ankles are sure to result.

The drill will not be given too often and the run at first will be made short, increasing it from drill to drill. Commencing slowly, let the pace be increased up to the middle of the run and then gradually decreased. Spurts may be indulged in during the run for short distances, but not until the men are in good condition. When men, especially young men, fall out after a short run their condition should be noticed and an examination made. Men showing any sign of heart trouble ought not to be allowed to run and will be reported to the surgeon. Soldiers sometimes have temporary ailments which render them unfit for the gymnastic drill, but which do not incapacitate them for ordinary duty. Such men may for the time being be excused from the gymnastic drill.

In connection with instruction in running, sprinting and hurdling may be practiced; they are treated of under the head of Track Events.

It is necessary to breathe deeply from the commencement of the run so that the lungs will be sooner brought into full play. It would be well to practice the men in abdominal breathing, so as to teach them better control of their lungs. This is the natural way of breathing—as one would breathe in lying down. Let the lungs be slowly filled with air, meanwhile forcing the stomach well forward so that the lower part of the lungs are first filled, then expel the air forcibly by pressing the stomach inward and upward against the lower part of the lungs. This is the same principle as in forcing air from a football with its aperture at the top, the pressure being made on the lower portion of the ball.

This exercise can be facilitated by placing the hands on the stomach and forcing it inward and upward in expelling the air. The lungs are filled slowly and emptied forcibly. The full capacity of the lungs will thus sooner come into play and it will be found that regularity in this exercise will increase the expansion. The only object in breathing entirely through the nose is to prevent dust and other irritating particles from settling in the throat and making it dry, but in severe running, especially in racing, the mouth will have to be kept open, as the volume of air taken in and expelled is too great for the mouth to be closed. All runners of the present day never think of breathing entirely through the nose.

WALL SCALING.

If no facilities for wall scaling exist at a post, a wall of almost any height may be built of heavy boarding. Such a wall should be about four feet across the top, boarded on top and sides, and well braced. To insure stability the bottom of the wall should be a little wider than the top, the sides of the wall making a slight variation from the vertical lines. Strips of boarding two or three inches in width and thickness and with a groove on the inner side, so that the hand can obtain a firm grip, should be firmly nailed on each top edge of the wall. It will be found more convenient to make a wall in sections, from twelve to twenty feet in length, depending on the height.

WALL SEVEN TO TEN FEET IN HEIGHT.

Such a wall will be scaled without apparatus. Two methods of scaling are prescribed. The drill will first be without arms. Men have intervals of about one pace; each front and rear rank man act together, file closers on the flanks, heavier men in rear rank.

First Method.

Prepare to scale, SCALE.—At first command, front rank runs rapidly toward the wall, places his back to wall and takes position with feet separated about

fifteen inches, knees bent, fingers interlaced, palms upward, forearms on thighs, body erect on hips, muscles set; hands should not be higher than two feet from the ground and should be held near body, Fig. 1; at *scale*, rear rank steps forward, places left foot on step made by hands of front rank, places hands on his shoulders, raises himself on step, stiffens muscles of left leg, places right foot on left shoulder of front rank, Fig. 2, follows with left foot on right shoulder, rises and grasps top of wall with both hands, and surmounts wall; at same time front rank straightens legs and assists man up. If necessary, the front rank raises the rear rank farther up by placing his hands under the feet of the



FIG. 1.



FIG. 2.

man on his shoulders. After reaching top of wall the rear rank lies down with breast to wall, left hand and left heel grasping the opposite coping, and extends right arm down to front rank, who is assisted up. In assisting the man up the hands should not be clasped, but each should grasp the other's wrist. Front rank, followed by rear rank, then jump down on other side of wall. To guide the jumper and to break the fall, let the left hand rest momentarily on top edge of wall during the descent.

Second Method.

This is the best and quickest method. If the front rank be unable to surmount the wall in the manner described below, let him use the means employed in the first method.



FIG. 3.

Prepare to scale,
 SCALE.—At first command, front rank runs forward and takes position as in the first method, Fig. 1; at *scale*, rear rank runs forward and without stopping in the run places left foot on step formed by hands of front rank, and is thrown upward to top of wall, Fig. 3; this is similar to the

method of throwing a man upward in tumbling. It requires a quick setting of the muscles of the left

leg after putting foot on step and quick straightening of the legs by the front rank and a vigorous upward lift; the forearms of the front rank do not leave the thighs until just as the legs are straightened. In this manner there is united action of the muscles of the legs, body, and arms. After a little practice a man can be thrown to a much greater height than when standing on the shoulders. Front rank then runs back to get a start, runs toward wall, springs well up, throws left foot high up on wall, gives right hand to that of rear rank (grasping each other's wrists), and is assist-



FIG. 4.

ed to top of wall; rear rank is well braced on top of wall, right foot forward, right arm extended downward, Fig. 4. Simply the foot of the front rank need touch the wall in ascending, it being the object to keep the body away from the wall. The descent is made as in first method.

With rifle in the above two methods, at the command *prepare to scale*, front-rank man takes rifle from rear rank and rests both rifles against wall to his left, then turns left about and takes position for scaling; after rear rank goes up the rifles are passed up to him by front rank. In descending, the piece

is held in right hand at the balance, piece horizontal.

Instead of the rear rank using left foot in stepping on hands of front rank, the right foot may be used, men being cautioned beforehand.

HIGH WALL.

This is a wall from fifteen to twenty-five feet in height. It may be scaled by means of apparatus or without.

With Apparatus.

The inclined ladder, inclined plank, and ropes or poles, suspended in front of wall, may be used.

Follow the methods prescribed for climbing with such apparatus.

If the wall have a wooden front, holes may be cut in the boarded front of wall about four inches long, three inches high, eighteen inches apart in width, and nine inches apart in height. Blocks may be screwed to face of wall, about three inches thick, four inches wide, eighteen inches apart in width, and nine inches apart in height; also horizontal grooves made about one inch deep, two inches wide, eighteen inches long, and nine inches apart in height.

The methods of climbing by means of holes, blocks, and grooves naturally suggest themselves from what is given for the inclined ladder.

Without Apparatus or by Mutual Support.

The man first surmounting wall carries a coil of rope fastened to his back, or one may be thrown up to him; gunslings or parts of the soldiers' garments tied together may be used in lieu of a rope.

Using Three Tiers.—This requires six men and a squad leader.

For convenience in description take men in two ranks, the heaviest men in the front rank, lighter and more active in rear rank.

Prepare to scale, SCALE.—At first command, front rank forms first tier as follows: No. 2 back toward wall, No. 1 on his left, No. 3 on his right (left and right of No. 2 as he now faces); all interlace arms, right arm above left of adjoining man, hands against backs of adjoining men, shoulders nearly touching, feet separated, body well braced; squad leader takes place back of Nos. 1 and 2 and takes position for throwing No. 1 rear rank on shoulders of Nos. 1 and 2 front rank; No. 3 rear rank takes corresponding position back of Nos. 2 and 3 front rank to throw up No. 2 rear rank on shoulders of Nos. 2 and 3 front rank, Fig. 5; at *scale*, Nos. 1 and 2 rear rank are thrown up to their positions; balls of their feet rest on shoulders near the neck. The squad leader then throws up No. 3 rear rank, whose left foot steps on hands of squad leader, right foot on left shoulder of No. 1 front rank, left foot on stirrup formed by hands of men on second tier, Fig. 6, and he is thus raised upward to top of wall. No. 3 rear rank now throws one end of the rope to the second-tier men, who hold it while he makes the descent on opposite side of wall. After descending he fastens rope to any object available or else makes loop about body and braces himself against bottom of wall. The others now ascend and descend by means of the rope; the last man on wall can drop into the arms of his companions. When carrying the piece, at first command all pieces are placed against the wall; after No. 3 rear rank has gained top of wall,

pieces are passed by squad leader to second tier men and to No. 3, who lays them on top of wall. Before descending, each man slings rifle on back, the slings



FIG. 5.



having been loosened beforehand. To save time the pieces of the first tier and squad leader need not be passed up, but slung on back before climbing the rope. If no slings are available the pieces can be passed up and afterward dropped to men on opposite side of wall. To facilitate the scaling, one or two men, after reaching top of wall, may remain there, assisting the others in the ascent and descent; also No. 3 rear rank should be assisted in holding the rope.

Using Four Tiers.—This requires nine men and a squad leader. Let them be arranged in two ranks as before, No. 4 rear rank being vacant.

Prepare to scale, SCALE.—At first command Nos. 1, 2, 3, and 4 front rank form first tier, right forearm of No. 1 and left forearm of No. 4 resting against wall, the four men forming an arc facing wall; squad leader and Nos. 3 and 5 rear rank take position for throwing Nos. 1 and 2 rear and 5 front rank on shoulders of Nos. 1 and 2, 2 and 3, 3 and 4, respectively, front rank; at *scale*, second tier is thrown into position; squad leader then throws up No. 5 rear rank, who climbs on top of shoulders of Nos. 5 and 2 second tier, and next throws up No. 3 rear rank, who takes place on shoulders of Nos. 2 and 1 second tier; No. 5 third tier then makes step by placing right hand on upper leg, No. 3 third tier places left foot in step and is raised to top of wall, Fig. 7. Using the piece, the same principles are followed as with three tiers. It is not deemed advisable to attempt more than four tiers of men in wall scaling. In Fig. 7 the position of the feet of some of the men of second and third tiers is not as prescribed. The rapidity of the formation, the nature of the ground, and being at the corner of the walls are the causes of the variations, and each man assumes the position most stable for



FIG. 7.

him for the particular time. The camera caught the group instantaneously just at that point in the ascent.

In scaling by mutual support, great care should be exercised and the men gradually instructed until they become proficient in all the details, and thus acquire confidence in themselves. After the men have become expert, it is not necessary to give them assistance in mounting the shoulders.

If more than four tiers of men should be tried, follow the general method given for four tiers.

Another Method, using Four Tiers.

When the men have become expert in building pyramids, the following is a quick method of scaling a wall by using four tiers—eight men are sufficient: At the command *scale*, the rifles are laid together in a row on the ground near the wall. The first three tiers form according to the three-tier method, Fig. 6; the third-tier man carries a one-quarter or three-eighths inch rope on his back or around his waist. Then a light and active man goes up the pyramid and forms the fourth tier, and is assisted to the top of the wall by the third-tier man. The fourth tier man carries the climbing rope—an inch and an eighth or an inch and a quarter—one end being tied around his waist. This rope he fastens or holds after surmounting the wall. As soon as the third-tier man surmounts the wall he drops the small rope to the extra man on the ground. The rope is passed through the gun-slings and the end fastened to the hanging portion of the rope, so that the rifles can then be all pulled up together as soon as there are sufficient men on the top of the wall to raise them. The descent of the squad to the other side of the wall naturally suggests itself.

APPARATUS WORK.

The work on apparatus demands a corps of assistants who should be non-commissioned officers, and who should be especially instructed in their duties.

Any squad exercising on any one apparatus should not exceed twelve men, and not until the men have become proficient in most of the exercises should they be allowed to exercise at will.

A number of exercises are laid down for each apparatus; the simpler should be given first, gradually leading up to the more difficult. Instructors should go through each exercise, being followed by the men from the right of each squad, who, upon completion of their work, take position on the left; the instructor should endeavor to instill confidence in the men, exercising care to prevent accidents.

The usual commands for exercising on apparatus are **READY**, upon which the starting position is assumed; **EXERCISE**, which starts the execution; **HALT** stops the execution of any movement; **DOWN**, the command for dismounting from or leaving the apparatus.

In such an exercise as climbing the commands may be **READY**, **CLIMB**, **HALT**, **DOWN**.

Exercises are performed *sidewise*, along the apparatus, or *across* it.

A side position is one in which a line drawn through the shoulders of the gymnast would be

parallel to the length of the apparatus, as side hang, Fig. 1 *a*, horizontal bar.

A cross position is one in which that line is perpendicular to the length of the apparatus, as cross hang, Fig. 2 *b*, horizontal bar.

The following list of terms, with explanations, will assist the instructor in his work :

“Front” means that the face of the gymnast is toward the apparatus.

“Back,” that his back is toward it.

In case neither front nor back is mentioned, the former is meant.

“Ordinary grasp,” knuckles are turned toward the face or toward their own side, Fig. 1 *a*, horizontal bar.

“Reverse grasp,” knuckles are away from face, Fig. 10 *a*, horizontal bar.

“Combined grasp,” one hand in “ordinary” and other in “reverse” grasp, Fig. 8 *a*, horizontal bar.

If no grasp is mentioned, the ordinary is meant.

“Rest” or “straight-arm rest,” body is supported with straight arms, Fig. 1 *a*, parallel bars.

“Bent-arm rest,” supported with bent arms, Fig. 2 *b*, parallel bars.

“Arm hang,” hanging by upper arms, Fig. 6 *b*, parallel bars.

“Knee circle,” circle from one knee with help of hands, Fig. 5 *b*, horizontal bar.

“Seat circle,” both knees and help of hands.

“Hock circle,” one or both knees without hands.

Jumps, Mounts, and Vaults.

“Flank,” body is thrown to the side without a turn, Fig. 7, horse.

“Front,” body makes a quarter turn inward toward the apparatus, Fig. 8, horse.

“Rear,” body makes a quarter turn outward away from apparatus, Fig. 9, horse.

“Squat,” knees drawn up to chest, Fig. 1, horse.

“Straddle,” legs extended, wide apart, Fig. 5, horse.

“Wolf,” one leg is in squatting position and other straddles sidewise, Fig. 4, horse.

“Feint,” one or both legs are circled around one arm, but do not pass under hand and are brought back to or through original position, Fig. 10, horse.

HORIZONTAL BAR.

This is a bar of wood or iron, preferably of wood, one and a half or two inches in diameter, at least six feet in length, and of sufficient height from floor to require a jump upward to reach it.

I. *Exercises Hanging by Hands.*

Many of these exercises can be practiced on the bar by two or three at a time. When the nature of the exercise permits, it should be practiced with all of the different grasps.

1. Repeated jumps to side hang, Fig. 1 *a*, or cross hang, Fig. 2 *b*, arms straight or bent.

2. The same, raising legs slowly to horizontal position, held together and extended.

3. In side or cross hang, arms straight, rise slowly to bent-arm hang and return slowly to straight-arm hang.



FIG. 1.

4. Same as 3, except one hand grasps bar, free hand grasping wrist, Fig. 3 *b*, forearm, or upper arm.

5. In side hang, arms straight or bent,

a. Release grasp of both hands, with clapping of hands.

b. Release grasp with change of grasp—for instance, ordinary to reverse, or *vice versa*.

c. Travel along bar, one hand after the other.

d. Travel with one hand crossing the other.

e. Travel both hands together, hopping.

f. These traveling exercises with knees raised or legs horizontal.

6. In side hang, arms straight, swing forward and backward in ordinary grasp and



FIG. 2.



FIG. 3.

- a.* Release one or both hands momentarily at end of each back swing.
- b.* Travel sidewise, one hand after the other.
- c.* Change to reverse grasp at end of each front swing, then to ordinary grasp in each back swing, or combined grasp in each front and back swing.
- d.* At end of front swing make one half turn, one hand retaining grasp, other hand taking ordinary grasp on other side of bar.
- e.* The same, except both hands release grasp and take ordinary grasp on other side of bar.

7. In cross hang, arms straight or bent,

a *b*



FIG. 4.

- a.* Travel forward or backward, one hand after the other or past each other, Fig. 3 *a*.
- b.* Travel, both hands together, hopping.
- c.* Swing on bar, releasing hands momentarily at end of swing.

8. In side hang, arms straight,

- a.* Raise legs slowly forward and upward until insteps touch bar, legs straight or bent, Fig. 2 *a*.

b. The same, except pass legs between arms and under bar and make

*a**b*

- a* complete turn over backward with body, Fig. 4 *a*, thence slowly back to starting position.
- c*. The same, except after turning over release one hand, when a complete turn of the body to the starting position naturally follows.
- d*. Turn over as before to the hang on both knees, Fig. 4 *b*.
- e*. Turn over to position head hanging downward, body and legs in a vertical line, Fig. 5 *a*.
- f*. Swing in above turn - over positions.
- g*. Pass legs between hands under bar and assume position of back lever, Fig. 6 *a*.



FIG. 5.

*a**b*

FIG. 6.

a b



FIG. 7.

a b



FIG. 8.

h. Pass legs back to front lever, Fig. 7 *a.*

II. *Exercises in Upper-Arm Hang and Rests.*

1. In side hang, ordinary grasp, Fig. 1 *a,*

a. Pull up to hang on either arm or both, Fig. 8 *b,* and swing on either arm or both, hands free or clasping bar.

b. Pull up to bent-arm rest on one or both arms, Fig. 1 *b.*

c. Pull up to bent-arm rest on one arm, turn back to bar, and assume back bent-arm rest, Fig. 9 *a*, thence to back straight-arm rest; descend, reversing movements.

d. Pull to upper-arm hang, pass to bent-arm rest, and then to straight-arm rest, Fig. 9 *b*; descend, reversing movements.

2. In straight-arm rest reverse grasp, form lever over bar, using one or both arms, Fig. 10 *a*.

3. The upstart. Swing, and at end of front swing, raise feet quickly until insteps touch bar, arms and legs straight, Fig. 2 *a*, shoot legs quickly forward, and swing upon bar to

a Upper-arm hang, on one or both arms, Fig. 8 *b*.



FIG. 9.

a *b*



FIG. 10.

b. Bent-arm rest, Fig. 1 *b.*

c. Straight-arm rest, Fig. 9 *b.*

4. Upstart with circling of right or left leg on right or left side of hands, or one or both legs between hands, or straddle outside of hands. Just as the insteps are to touch bar in the swing the desired circle is commenced.

5. Upstart with combined grasp and arms crossed. A half turn is made at end of back swing and immediate upstart without further swing.

6. The uprise. Swing forward and backward with ordinary grasp and

a. Bend and straighten arms at end of each back swing.

b. Pull up to upper-arm hang at end of back swing, Fig. 8 *b.*

c. To bent-arm rest, Fig. 1 *b.*

d. To straight-arm rest, Fig. 9 *b.*

7. Upstart and uprise can be combined with various squatting, straddle and flank vaults over bar, or seats on bar; also combined with the various circles.

III. *Circles at, on, or around Bar.*

1. From side-hang circle on bar,

a. With both legs to straight-arm rest, Fig. 9 *b.*

b. With right or left leg on right or left of hands, Fig. 5 *b.*, or either leg between hands.

2. In above positions on bar, circle forward or backward, using proper grasp.

3. Seat circle forward or backward, hands between or outside of legs.

4. Hock circle backward on both knees, Fig. 10 *b.*, or either knee, other leg thrown over foreleg of circling leg.

5. Riding seat, circle in either direction, Fig. 7 *b*.
6. Upper arm hang, circle forward, Fig. 8 *b*.
7. Elbow hang back to bar, circle forward or backward, Fig. 6 *b*.
8. Back bent-arm rest, circle, Fig. 9 *a*.
9. Back straight-arm rest, circle.
10. Giant circle forward or backward. Arms are kept extended.

Combine any movements given above. Endeavor to have the exercise present a finished appearance. When the nature of the exercise permits, dismount from the bar by swinging down to position, Fig. 2 *a*, then shoot the legs forward and alight gracefully to the front.

VAULTING BAR.

This is a horizontal bar arranged between uprights so that the height from the floor may be varied. It should first be placed about four feet from floor, and may then be gradually raised.

Exercises.

1. Stand facing bar, grasp it, jump upward on bar, arms extended, body straight, head erect, straight-arm rest.

2. Jump to straight-arm rest, carry both legs to either side, legs extended until at height of bar.

3. The same, but in bringing legs up to bar give a slight swing and pass legs over bar and descend on opposite side, facing to the front.

4. Vault bar in one motion as above described.

5. The same, using one hand.

6. Vault on either side of hands, bending legs well, keeping feet together; descend facing front.

7. Vault, both legs passing between hands.

8. In straddle position.

9. With one leg well bent, the other extended horizontally—the wolf jump.

10. Jump to straight-arm rest, bend arms, bend trunk forward, raise legs, passing them over bar on either side, and descend on opposite side, facing right or left; front part of the body is always facing bar until moment of alighting.

In vaulting the bar when it is higher than the head, hands should be grasped well around bar, almost resting on wrists, and preferably having thumbs over bar.

11. Jump to straight-arm rest, bend arms, incline trunk forward, raise legs directly overhead, and turn somersault; alight facing to the front or right or left.

12. Jump to straight-arm rest, swing legs well and turn somersault, arms remaining straight, and alight facing to the front or right or left.

JUMPING STANDARD.

This consists of two uprights against which a light rod can be placed—placed on pegs whose height can be varied; rod falls from its place upon being struck.

Standing High Jump.

1. Facing standard, jump well up in the air and over bar, bringing feet well up under body.
2. Facing right or left, jump upward and side-wise, throw body well over bar, one leg passing over bar after the other, legs perfectly straight.

Running High Jump.

This is treated of under head of Field Events.

Place one man on opposite side of bar and near it in a position to be vaulted over, head being well down, hands on knees, back rigid. A second man takes a run, jumps from both feet, places hands on man's shoulders, raises legs well over bar, and leaps straddle over his head.

PARALLEL BARS.

These are two parallel bars the height of which is about that of the chest or shoulders, and the width between them being the average shoulder breadth of the soldier; bars should be fastened to floor, or heavy enough to make them stationary.

A small platform, flush with floor at one end and raised three or four inches at other, should be at the end of the bars where the exercises commence.

Some of the exercises admit of two men practicing at once, one at each end.

The following rules are to be observed:

Unless the exercise calls for bending of legs, they should be kept straightened out and rigid, toes pointing to the front, the trunk and arms being the parts of body which are principally exercised. In dismounting on either side of bar always face front or rear, grasping bar with hand next to it and letting knees bend well on striking floor. In dismounting between bars face either to right or left, grasping right or left bar with right or left hand, and pass out at end of bar, never going under it. In dismounting from ends of bar, if facing bar, both hands remain on it; if back is to bar, face either right or left as when between bars, unless nature of exercise, such as turning somersaults over ends of bars, renders it impossible.



FIG. 1.



FIG. 2.

I. Exercises in Straight- and Bent-Arm Rest.

1. From cross stand at end of bar, Fig. 1 *b*, jump several times to straight-arm rest, body erect, head up, legs together, back arched, Fig. 1 *a*. In this position,

- a*. Walk on hands along bars one after the other.
- b*. Hop with both hands at once.

2. Above exercises, using bent-arm rest, Fig. 2 *b*.

3. In straight-arm rest,

- a*. Raise legs to horizontal position.
- b*. Carry them over either bar without touching bar.
- c*. Straddle legs one over each bar without touching bar.
- d*. Lower body to bent-arm rest and return—the “dip.”

II. *Swinging Exercises in the Rest.*

The swinging at first should not be too high. Take natural swing, keeping legs straight and together, head well up.

1. Swing in straight- or bent-arm rest, and
 - a. Lift hands alternately.
 - b. Both together.
 - c. Hop forward or backward.
 - d. Throw legs well up in forward swing and backward swing.
 - e. Straddle legs when over bar during forward or backward swing.

2. Swing in straight-arm rest and drop to bent-arm rest and return without pause or jerk to straight-arm rest.

This bending of the arms can take place

- a. At beginning of front swing.
- b. At beginning of back swing.

3. Swing from straight-arm rest to bent-arm rest and return, at beginning of every front and back swing, thus combining the two movements.

III. *Seats.*

1. From cross stand at end of bars, jump to the following seats, legs swinging up between bars, hands in rear of body:

- a. Both legs over either bar, Fig. 3 *b*.
- b. One leg over either bar, leg slightly bent.
- c. Riding seat on either bar, Fig. 3 *a*.
- d. Straddle seat, Fig. 4 *a*.

2. Above seats by swinging one leg outside of bars and one between bars, cutting away the hand as leg swings from outside over bar.



FIG. 3.



FIG. 4.

3. The same, swinging both legs outside of bars.

4. From straight-arm rest in middle of bars, swing backward and take following seats, hands now being in front of body :

a. Both legs over either bar, Fig. 4 *b.*

b. Riding seat.

c. Straddle seat.

5. Change of seats.

a. Without a swing, as changing hands from behind to in front of body, from riding to straddle seat, straddle seat to seat with both legs over one bar, etc.

b. With a swing, by swinging forward to seats in front of hands, or backward to seats in rear of hands.

c. Face to the rear, without a swing, as in Fig. 2 *a.*, by changing from seat with both legs over one bar to straddle seat faced to the

rear. It is seen in Fig. 2 *a* that right hand is carried to left bar and right leg is to be thrown over bars, thus making a left-about face. Similarly from riding seat facing to the front change to riding seat facing to the rear on other bar, etc.

- d.* Face to the rear, with a swing—for example, swing to rear—as legs rise above bars straddle them, make a right or left turn about with the body, and take straddle seat faced to the rear. With similar swing and turn take riding seat or with both legs over either bar, etc.

IV. *Leg Circles and Vaults.*

1. From cross stand at end of bars, take following circles over end and return to platform :

- a.* Either leg outside or inside of either bar.
- b.* Both legs outside of either bar.
- c.* Legs straddling outside or inside of bars.

2. Above circles ending in straight-arm rest.

3. Swinging in straight-arm rest in middle of bars, take following circles of legs, cutting away one hand and then continuing the swing :

- a.* Right leg over right bar in forward or backward swing.
- b.* Left leg over left bar similarly.
- c.* Both legs over either bar in forward or backward swing.

4. From cross stand at end of bars, take following vaults, alighting at side of bar :

- a.* Both legs between bars over either side, Fig. 5, the rear vault.
- b.* Both legs over both bars from right to left or left to right.



FIG. 5.

*a**b*

FIG. 6.

5. Swinging in straight-arm rest in middle of bars, take the following vaults:
- a.* Rear vault in front swing.
 - b.* Front vault in rear swing.
 - c.* Rear and front vaults with half turn in alighting.

V. Exercises in Upper-Arm Hang.

1. In upper-arm hang, Fig. 6 *b*,
 - a.* Swing forward and backward, hands grasping bars.
 - b.* Swing, and in the front or rear swing mount to the various seats given.
 - c.* Swing up to bent-arm rest or straight-arm rest, Fig. 1 *a*. This exercise in either the front or back swing.
2. Swing from straight-arm rest and

fall back to arm hang at beginning of front swing, and pull up again to the rest at end of front swing, or pull-up may be executed at end of back swing.

VI. *Rolls.*

1. Swing in arm hang and

- a.* Bring feet up over head and roll to the different seats, straddle seat, etc.
- b.* Roll over to bent-arm rest.
- c.* To straight-arm rest.
- d.* Roll completely around on arm hang.

2. In straight-arm rest roll forward with shoulders against bars, Fig. 6 *a*,

- a.* Into the various seats given.
- b.* The arm hang.
- c.* Bent-arm rest.
- d.* Straight-arm rest.



FIG. 7.



FIG. 8.

VII. *Somersaults at End of Bars.*

These may be executed from the different seats or swinging in bent- or straight-arm position, Fig. 7.

Fig. 8 shows the hand stand.

HORSE.

The horse is usually covered with leather, arranged so that its height from the floor may be varied. It is usually placed at the height of the chest. The pommels, which are three or four inches in height, are removable. A board like that described for the parallel bars is generally used.

EXERCISES FROM SIDE OF HORSE.

In these exercises the horse is so placed that the neck is to the left of the board and the croup to the right, the side nearest the board being called the near side and the other the off side.

The exercises are started from the near side; they may be executed from the standing position, grasping the pommels, with a run, or from the rest, they being more difficult from the rest. The dismounting, or end of an exercise, may be left to the choice of the performer. It is usually on the board on near side of the horse, or on the off side with back to the starting point, or one of the vaults, flank, front, or rear.

I. *Knee and Squatting Exercises.*

On board grasping pommels, or with a run:

1. Jump on neck, saddle, or croup, and
 - a. Kneel on one knee, other leg straight and



FIG. 1.



FIG. 2.

against near side of horse or extended horizontally backward.

- b.* On one knee, other leg passing over horse and resting against off side.
- c.* On both knees.
- d.* On both knees and release grasp of pommels and spring to off side.
- e.* Squat on one leg, other leg against near side.
- f.* Squat on one leg, other leg passing over horse and resting against off side or extended horizontally forward.
- g.* Squat on both legs, Fig. 1.
- h.* Kneel with one and squat with the other.
 2. Knee vault over saddle, legs not touching horse.
 3. Squatting vault,
 - a.* Over saddle.
 - b.* Over saddle, with forward extension of legs and straightening of body.

c. With either pommel between legs.

4. Squat over saddle to back rest, Fig. 2, back bent-arm rest, or lying on back across saddle.

5. From back rest, Fig. 2, squat backward,

a. With one foot in saddle, other leg against either side of horse.

b. With both feet in saddle.

c. To front rest, Fig. 3.

Several exercises should be gone through with without pause after the correct positions have been taught.

II. *Wolf Jumps.*

Standing on board, or with a run :

1. Jump and squat with one leg in saddle and extend other leg straight over neck or croup. Fig. 4.

2. Change respective positions of legs either with a jump down or without.



FIG. 3.



FIG. 4.

3. Wolf jump to back rest, Fig. 2.
4. Wolf jump over horse.

III. *Straddle Exercises.*

Standing on board, or with a run :

1. Jump to front rest with momentary straddle of legs.

2. Jump and straddle on horse.

3. Jump to straddle on horse, to stand in saddle, and then off horse.

4. Straddle over horse, Fig. 5.

5. Straddle over horse to back rest, Fig. 2.

Combine the knee, squatting, straddle exercises, and wolf jumps with or without a jump down on board.



FIG. 5.

IV. *Mounts.*

These exercises lead to the seat on neck, saddle, or croup. The gymnastic riding seat requires the legs perfectly straight, with a firm grip of thighs. However, the value of the exercise is increased if in taking such a seat as the side seat, Fig. 6, the arms are kept straight, the weight of the body resting on them. In all circling, keep the arms and legs as straight as possible.

The mounts and dismounts are described for one leg; they can be similarly executed with the other.

Standing on board grasping pommels, or in front rest, Fig. 3:

1. Outside circle forward with right leg to side seat on neck, saddle, Fig. 6, or croup.

2. The same with quarter left turn to riding seat.

3. Same with half left turn to side seat facing near side.

4. Inside circle with right leg passing under left hand to side seat on neck, saddle, or croup.

5. Same, with quarter left turn to riding seat.

6. Same, with half left turn to side seat, facing near side.

7. Circle backward with left leg, at same time making half left turn to side seat on croup or saddle facing near side.

8. Same, with three-quarter left turn to riding seat.

9. Same, with full left turn to side seat, facing off side.

From back rest, Fig. 2,

1. Circle right leg backward and under

right hand to side seat on neck, saddle, or croup.

2. Same, with quarter and half turns.



FIG. 6.

3. Circle right leg under left leg and under left hand to side seats.

4. Same, with quarter and half turns.

5. Circle right leg forward and over left leg and make left half turn to side seat on neck.

6. Same, with three-quarter left turn to riding seat.

7. Same, with full left turn facing off side.

V. *Dismounts.*

From side seats, as Fig. 6 :

1. Circle right leg backward

a. From outside, and dismount on board.

b. From inside, passing under left hand.

2. Circle left leg forward

a. From outside and dismount on off side.

b. From inside.

3. Dismount from riding seat.

These dismounts naturally suggest themselves, as circling right leg forward or backward and with quarter or half turns.

VI. *Flank Vault Exercises.*

A flank vault is one in which the right or left side of the body is turned toward the upper side of the apparatus and no turn is made, Fig. 7.

Standing on board, or with a run :

Standing on board, or with a run :



FIG. 7.

1. Jump up and swing both legs to right side and return to board.

2. Jump up, swing legs to right, and place feet on croup, legs straight.

3. Right flank mount to side seats facing off side.

4. Right flank mount to back rest, Fig. 2.

5. Right flank vault over horse, Fig. 7.

VII. *Front Vault Exercises.*

The front vault is one in which there is a backward swing of the legs and body, the face being kept toward the apparatus during the vault, Fig. 8.

Standing on board, or with a run:

1. Jump up and swing legs to right over horse, make quarter-left turn, and return to board facing horse.

2. Right front mount to riding seat.

3. Right front mount to riding seat with half turn of body, facing croup.

4. Right front vault over horse, Fig. 8.



FIG. 8.

VIII. *Rear Vault Exercises.*

A rear vault is one in which a quarter turn outward away from apparatus is made, the back being toward apparatus as body passes over it, Fig. 9.

Standing on board, or with a run:



FIG. 9.



FIG. 10.

1. Jump up and swing legs to left as high as horse, make quarter left turn, and return to board facing horse.

2. Left rear mount to riding seat.

3. Left rear mount to riding seat with half turn, now facing croup.

4. Left rear vault over horse, Fig. 9.

IX. *Feints.*

A feint is shown in Fig. 10, the right leg being swung around right arm to other side of horse and immediately swung back again. The feint can be executed with both legs together.

From front rest:

1. Feint of right leg with,
 - a. Left flank swing to front rest or back rest.
 - b. Left flank vault over horse.
 - c. Left front mount to neck, saddle, or croup.

d. Left front vault over horse.

e. Left rear mount to neck, saddle, or croup.

f. Left rear vault over horse, Fig. 9.

2. Above exercises, except feinting, with both legs held together.

X. Somersaults.

From the board, with a run, from kneeling or squatting position, etc.

In the somersault the arms may be held bent throughout, at first bent and then straightened, at first straight and then bent, or straight throughout.

EXERCISE WITH HORSE LENGTHWISE.

These exercises are executed with a run from the rear; the board is just behind the horse and its distance therefrom may be varied. The pomels are removed.

I. *Jumps.*

1. Jump to riding seat on croup, saddle, or neck.

2. Same and face to the rear in riding seat by pressing with hands, throwing legs up, and making a half turn.

3. Same as 2, except that the half turn is made during the jump.



FIG. 11.

4. Jump to squatting or standing position on croup, saddle, or neck.

5. Same as 4, and with help of hands straddle over horse.



FIG. 12.

6. Giant leap over horse, Fig. 11.

7. Same with half turn and straddle of legs (backward leap).

8. Giant leap over horse with legs in squatting position.

II. *Legs Circling, Vaults and Somersaults.*

1. Circle right leg over horse, using one or both hands and alight to left of croup.

2. Same with both legs (rear vault), Fig. 12.

3. Flank and front vaults over horse.

4. Somersaults off end of horse.

HORIZONTAL BEAM.

This is a round, wooden beam, twenty-five to thirty feet in length, nine to twelve inches in diameter, and usually a little smaller at one end than at the other. It is arranged in supports at each end, so that its distance from the floor may be varied. When inconvenient to do this a good height is about four feet; where any ditch is available it may be placed across this. The beam may also be suspended at either end so that it will oscillate, thus rendering the exercises more difficult.

Exercises will be first practiced without rifle or accouterments.

A number of men can be exercised at once.

1. Take seat astride beam, facing forward, advance hands to front, rest on them, and bring body up to hands, Fig. 1 *b*.

2. Sitting astride beam, facing forward, hands



FIG. 1.



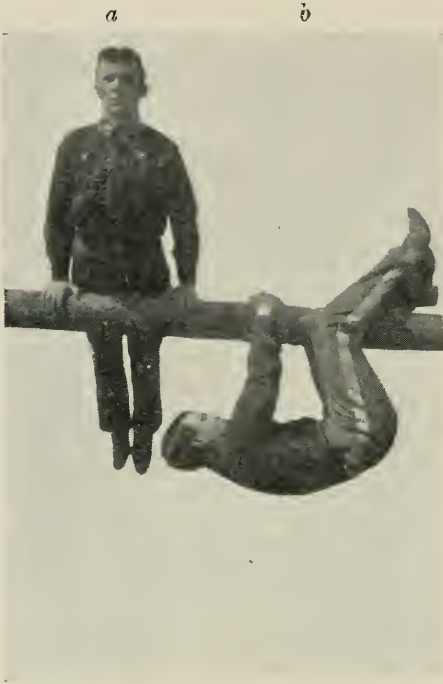


FIG. 2.



FIG. 3.

in front of body, rest on hands, carry body to rear, bring hands up to body.

3. Sitting astride beam, facing forward, throw either leg forward over beam and sit on beam, Fig. 1 *a*; cross beam sidewise by resting on hands alternately.

4. Sitting astride beam, facing forward, throw either leg to rear over beam, take position facing beam, resting on hands, Fig. 2 *a*; cross beam by using hands.

5. Sitting astride beam, facing forward, hands in front of body, rest on hands and bring feet on top of beam and stand up, left foot in front, hollow of right foot at heel of left, advance left foot and bring up right, Fig. 3 *a*.

6. Same exercise, right foot leading.

7. Cross beam standing by passing right foot over left and left over right.

8. Stand on beam, facing right or left, side step across beam, Fig. 3 *b*.

9. March backward across beam,

a. Left foot leading.

b. Right foot leading.

c. Right over left and left over right.

10. Sitting astride beam to face to the rear, press well with hands, raise legs upward above beam, and turn to the left or right about.

11. To pass on beam, two men meeting: Each man stands up, advances left foot, toe turned outward, each left hand grasps

the other's right arm near the shoulder, the right hand against left side under the arm; then both incline to the front, Fig. 4, advance the right foot and pivot around on left foot, thus passing each other.

12. Two men may also pass by one placing arms and legs around beam and swinging under it, Fig. 2 *b*, the other then walking above the man underneath, who in turn swings on top of beam.

In crossing with rifle it may be carried on the back, at the trail, port, or in both hands, being used as a balance.



FIG. 4.

PAIR OF SWINGING RINGS.

The rings are about eight to ten inches in diameter, covered with leather, hung on ropes or leather straps, fifteen or twenty feet in length, and so arranged that they can be adjusted to any desired height.

The exercises given are those for rings about seven feet from floor, or just within reach of the hands.

I. *Exercises without a Swing.*



FIG. 1.

1. Grasp rings and rise to bent-arm hang.

2. In bent-arm hang,
a. Extend right arm horizontally; return to bent-arm hang, and extend left arm similarly, Fig. 1.

b. Extend both arms.

c. Above two exercises with legs horizontal and together.

d. Throw right elbow well up, bring ring close to body, and come to bent-arm rest.

e. Same exercise with left arm.

f. One arm after the other.

g. Both arms together,
Fig. 2.

3. From bent-arm rest rise in rings, straightening the arms.

4. Grasp rings and carry feet up forward between rings and turn over until feet nearly touch floor, Fig. 3; return to first position; executed slowly.

5. Turn over as before, release hold of one ring, let body swing around, and regrasp other ring; executed slowly.

6. Turn over as before, let arms twist at shoulders (dislocation), and assume starting position.

7. Carry legs up forward between rings and throw left leg against front of left hand, release hold of ring as leg strikes hand and immediately regrasp ring; same exercises with right leg, Fig. 4; both legs at once.

8. Turn over for-



FIG. 2.



FIG. 3.

ward and hang head downward, body and legs in a vertical position.

9. Turn over forward and hang in horizontal position, face downward—i. e., back lever.

10. Same position, face upward—front lever.

11. Bring legs up forward to vertical position and shoot them out quickly to the front and come to bent-arm rest or straight-arm rest.

II. *Exercises with a Swing.*

Until the swing is learned, pupils may be started on the swing by the instructor.

To obtain a swing without assistance take a start by pushing against floor with feet and at end of backward swing bring legs up vertically between rings, arms straight, and during course of forward swing kick feet well out to the front.

1. Swing in bent-arm position.
2. Swing with one arm bent, the other extended horizontally.
3. Above exercises with legs extended to the front in horizontal position.
4. Swing with either leg resting on either arm.
5. Both legs on either arm, Fig. 5.



FIG. 4.

6. Place legs in positions 4 and 5 at end of backward swing and release them at end of forward swing by cutting away the hand.

7. Reverse movement, cutting away at end of backward swing.

8. Turn over forward at end of backward swing, twisting shoulders (dislocation).

9. Turn over backward at end of forward swing.

10. Upstart at end of forward swing—i. e., by bringing legs up forward to vertical position and shooting them to the front, and
a. Come to bent-arm rest.

b. To straight - arm rest.

11. Uprise at end of backward swing by pulling body well up and coming to

a. Bent-arm rest.

b. Straight-arm rest.

In swinging in the above rests the rings must be held close to body and back of hips.



FIG. 5.

TRAVELING RINGS.

Traveling rings are fixed about eight feet from the floor, distance between them depending on the length of rope suspending them, but it should not be so great as not to be easily reached with a swing from the adjoining ring. A raised step or board platform is placed at one end of the line of rings; rings may be of any number, depending on space, five or six being sufficient, however, for exercising.

Exercises.

1. Start from platform, grasp first ring with one hand, swing to next ring; after grasping second ring flex arm grasping first ring, then release its hold and swing to next ring; continue to end and return.

In swinging, the arm not in use should hang by the side; the other arm may be straight or bent.

2. Above exercise with legs horizontal, or with knees drawn up, fore and upper legs making a right angle with each other.

3. Swing from first ring to second, and on backward swing from second ring flex the arm grasping first ring, bring legs up forward and throw them over the arm, Fig. 5, cut away hand, and swing to third ring.

4. Above exercise, except legs straddle ring.

HORIZONTAL LADDER.

This ladder should be about eighteen inches wide, fifteen inches distance between rungs, of any length so long as it is firmly supported and about eight feet from floor, it being suspended. The sides and rungs are perfectly smooth, sides being rounded on top.

The exercises below may also apply to the bridge ladder, which is simply two horizontal ladders combined with two more short ladders inclined against each other. Most of the exercises admit of a number of men being exercised at the same time. Except where it is specified that the lower limbs are brought into play they should be held together and straightened out.

I. *Exercises Forward.*

1. Standing at end of ladder, back to wall, spring to rung overhead in ordinary grasp, Fig. 1 *b*, and

- a.* Move left hand forward and grasp next rung and follow with right.
- b.* Travel with right hand leading.
- c.* Above two exercises, except that each hand is advanced to the rung beyond the one grasped by the other hand.
- d.* Hop with both hands from rung to rung, bending arms slightly.



FIG. 1.

*a**b*

2. All of above exercises,

a. With knees drawn up, fore leg and upper leg making a right angle.

b. With legs horizontal and extended.

3. All of above exercises in bent-arm position.

4. All of above exercises with the reverse grasp, Fig. 1 *a*.

5. From ordinary grasp on rung swing left arm well to rear, down by side, and forward, grasping second rung, swing right arm similarly, and grasp second rung from left hand.

6. From position at end of ladder, back to wall, spring upward and grasp outsides of ladder, and

a. Move left hand forward, followed by right.

b. Travel with right hand leading.



FIG. 2.

- c. Hand over hand.
- d. Hopping forward with both hands.
- 7. Exercises of No. 6.
 - a. With knees drawn up, fore and upper leg, making a right angle.
 - b. With legs horizontal and extended.

8. Exercises of Nos. 6 and 7 in bent-arm position, Fig. 2 *b*.

9. Nos. 6, 7, and 8 with hands grasping edges of ladder, knuckles being inward, Fig. 2 *a*.

II. Exercises Backward.

From position at end of ladder, facing wall.

These exercises are just the reverse of those forward.

III. Exercises along the Side.

1. Position facing side of ladder, spring upward, grasp one side of ladder, and
 - a. Move along the side, one hand following the other.
 - b. Hand over hand.
 - c. Hopping with both hands.

2. Above exercises in bent-arm position, Fig. 3 *a*.

3. All of above,
 - a. With knees well drawn up.
 - b. With legs horizontal and extended.



FIG. 3.

4. Position with back to side of ladder, spring upward, and grasp side with reverse grasp.

All of the exercises along the side in this grasp, Fig. 3 *b*.

Many of the above exercises forward and backward and along the side can be executed either with or without a swing.

IV. *Other Exercises.*

1. From position hanging on rung, bring feet up to second or third rung in front of hands, soles of



FIG. 4.

feet against rung, draw body up to ladder, extend arms, etc. In this position travel forward or backward along ladder, left arm and left leg moving together, etc., Fig. 4.

2. From above position bring feet between hands, place them against second or third rung back of hands, travel backward; return to first position.

3. From position hanging by knees on one rung and feet

under the adjoining rung, exercises can be given, bringing the back and abdominal muscles into play by raising the body up slowly toward ladder.

INCLINED LADDER.

This ladder is twenty to twenty-five feet in length, inclined against wall at an angle of from thirty to forty-five degrees, and fastened securely at both ends. In exercises on the ladder the descent is the reverse of the ascent.

I. *Exercises on Upper Side.*

1. Ascend ladder, hands and feet on rungs, with,

a. Left arm and left leg moving together, and right arm and right leg.

b. Left arm and right leg moving together, and right arm and left leg.

2. With hands on sides and feet on rungs.

3. With one hand on rung or side.

4. Without using hands.



FIG. 1.

Exercises should be executed rapidly after proficiency is attained.

5. From position with both hands extended upward on rungs, body against ladder, inside of feet against sides of ladder, legs straight, Fig. 1, ascend,



FIG. 2.

- a.* Left hand leading.
- b.* Right hand leading.
- c.* Hand over hand.
- d.* Both hands together.

Legs not used in these exercises.

6. To slide down ladder, place left fore leg over left side, right fore leg over right, hands or forearms clasping under sides of ladder; regulate descent by pressure.

7. Take exercise in carrying rifle or equipments.

8. Take exercises in carrying a man up and down ladder by,

- a.* One sitting on the shoulders of the other, all four hands being on sides of ladder.
- b.* Also with man on shoulder in position given for carrying wounded, Fig. 2.

When several men are ascending or descending the ladder the hands should always be on the sides.



FIG. 3.

II. *Exercises on Under Side.*

1. From position under and facing ladder, ascend and descend, with hands and feet on rungs,

a. Left arm and left leg moving together, and right arm and right leg.

b. Left arm and right leg moving together, and right arm and left leg.

2. Above exercises, except with hands on sides.

3. Ascend and descend with fore legs thrown over sides and hands on either rungs or sides.

4. To slide down ladder, throw left leg over left side, right leg over right, place arms around ladder, clasping hands; regulate descent by pressure, Fig. 3.

III. *On Under Side without using Legs.*

1. From position under and facing ladder, spring to rung overhead in ordinary or reverse grasp, Fig. 4, and ascend,

a. With right hand leading.

b. Left hand leading.

c. Hand over hand.

d. Both hands together, hopping.

2. Above exercises, grasping sides of ladder.



FIG. 4.

INCLINED PLANK.

This is a perfectly smooth plank, from two to three inches thick, rounded at the edges, twenty to twenty-five feet long, and inclined from thirty to forty degrees, and is securely fastened at the bottom.

1. Position facing plank, lean forward, grasp sides of plank with hands, place toes on plank, and ascend,

- a.* Left hand and left foot moving together, and right hand and right foot.
- b.* Left hand and right foot, and right hand and left foot.
- c.* Both hands together, followed by both feet together.

2. Lying down on plank, arms extended, hands grasping sides, feet against sides of plank, ascend, using hands only,

- a.* Left hand leading.
- b.* Right hand leading.
- c.* Hand over hand.
- d.* Both hands together.

3. From position under plank and facing it, grasp sides with hands and throw fore legs over sides; ascend,

- a.* left hand leading.
- b.* Right hand leading.
- c.* Hand over hand.
- d.* Both hands together.

4. To slide down plank on either upper or lower side, take positions similar to those prescribed for inclined ladder.

VERTICAL POLE.

The vertical pole is anywhere from fifteen to forty feet in length and from one and a half to four inches in diameter; it may be fastened both at top and bottom, or simply suspended from the top.

The pole is perfectly smooth. Exercises should never be continued to the point of exhaustion. In all climbing, occasionally carry the piece, using the sling. As a rule the descent in climbing is the reverse of the ascent.

I. *Using Both Arms and Legs.* *Exercises.*

At *ready*, take position facing pole.

1. At *climb*, raise right hand, arm extended, and grasp pole, the left hand following; place right foot against left side of pole, knee to right, pole in front of fore leg; raise left foot and place it in front of pole, ankles now crossing, pole between outside edges of feet, body upright, arms now bent, Fig. 1 *a*. Extend right hand upward, followed by left; draw up lower limbs, letting them slip along pole, straighten knees, and elevate trunk. Continue exercise until command *halt*.

At *down*, descend, reversing the movement.

2. Similarly take the exercises,

a. Left hand leading, position of feet reversed.

- b. Hand over hand, position of feet as in first exercise.
- c. Hand over hand, position of feet reversed.
- d. Extending both hands upward at same time, right hand being above, position of feet as in first exercise.



FIG. 1.

- e. Extending both hands at same time, left hand above, position of feet reversed.
- f. Drawing up legs at same time as extending arms. Either hand above, position of feet conforming; a jumping movement, arms and legs moving simultaneously.

II. *Using One Arm and Legs.*

Free hand rests on the hip, fingers to the front, Fig. 1 b.

Exercises are similar to those when using both arms and legs, position of feet depending on hand used in climbing.

III. *Using Arms Only.*

1. Raise right arm and grasp pole, left following; lift both feet from ground and place them to left

side of pole, legs together and straight; raise right hand and follow with left, Fig. 2 *a*.

2. Similarly take exercises,

a. With left hand leading, legs on right side of pole.

b. Hand over hand, pole between legs.

c. Shooting up both hands at once, either right or left leading, legs on left or right side of pole.

3. Above exercises, except that legs are horizontal.

4. To slide down pole:

Legs grasp pole as described in first exercise for the vertical pole. Pass right hand around pole and over to left breast, pressing well against breast with hand; pass left hand outside of right and grasp right forearm with left hand; regulate descent with pressure of arms and legs, Fig. 2 *b*. Also with

reverse grasp of the feet, pass left hand around pole and right outside of left and regulate descent as before.



FIG. 2.

PAIR OF VERTICAL POLES.

The distance between poles is about eighteen inches.

I. *Using Both Arms and Legs.*

1. Grasp right pole with right hand, left pole with left hand, arms extended; raise body and place legs against inside of poles, feet outside. In this



FIG. 3.

position climb with,
a. Right hand leading.

b. Left hand leading.

c. One hand after the other.

d. Both hands at once.

e. Both hands and feet simultaneously.

Legs and feet press well against poles in these exercises.

2. Above exercises, except that legs are against outside of poles, feet inside.

Instead of moving both legs at once, the exercises may be varied by drawing one leg up after the other.

3. Exercises of Nos. 1 and 2, except that the legs are around but one of the poles, pole being between outside of feet, same position as with single vertical pole.

4. Climb with right arm extended upward, knuckles outward and left arm downward, knuckles inward, Fig. 3; also with left hand upward and right downward, legs being on both poles or only the one pole—i. e., that which the arm extended upward grasps.

II. *Without Using Legs.*

Exercises similar to those above described can be executed without using the legs, the legs being held together between the poles, Fig. 3; also with them held in a horizontal position, or with knees drawn up, fore leg and upper leg making a right angle.

Hang with head downward, knees bent, and ascend poles, Fig. 4.



FIG. 4.

SLANTING POLE.

This is about three inches in diameter and twenty to twenty-five feet in length and laid against a wall at an angle of about forty-five degrees and fastened at top and bottom.

Exercises on the slanting pole are somewhat similar to those on the vertical pole.

I. *From Position under Pole, Back to Wall.*

Grasp pole with right hand, arm extended, follow with left, throw right leg over pole, outside of foot pressing against inner side of pole, place left foot across right, the heel on top of the ankle of right. Follow the system given for vertical pole.

II. *From Position above Pole.*

Grasp pole with right hand, arm extended, left hand following, extend trunk along pole, right foot against left side of pole, knee on right side, place left foot under pole, back of ankle clasping it. Follow the system given for vertical pole.

TURNING POLE.

This is the same as slanting pole, except that at each end of pole there is fixed an iron pin, projecting several inches and working in sockets, so as to allow the pole to turn on its longest axis. The exercises of climbing are the same as the slanting pole, they being more difficult by the effort necessary to preserve an equilibrium on the pole. Any exercise may be varied by turning the body with the pole, making either a half turn or a full turn.

PAIR OF SLANTING POLES.

These are fixed at an angle of about forty-five degrees and are about eighteen inches apart. The exercises on these poles are similar to those on a pair of vertical poles, and the series naturally suggests itself from that given on those poles.

ROPE.

This should be from one to two inches in diameter and fifteen to forty feet in length, fastened at top.

All of the exercises given for the vertical pole can be used for the climbing rope.

The following positions of the legs can be used in climbing :

1. Place right foot against left side of rope, knee to right side, rope in front of fore leg; lift left foot and bring it up under right with end of rope over instep; place sole of left foot on instep of right, the rope thus being folded around the right foot, passing under its hollow and held tightly in place by the left foot, Fig. 1.



FIG. 1.

2. Throw right leg around rope so that the rope passes inside of thigh, outside around leg and coming inside at the ankle; bring left foot up under right and fold rope around right



FIG. 2.

foot and hold it in place by placing the left foot upon the right. This is a good position in which to rest when climbing the rope for a considerable height, Fig. 2.



FIG. 3.

3. Another position of resting: Reach down with one hand and pull up the rope, one or both legs sitting or kneeling or standing in the loop thus formed, Fig. 3.

4. The position in which a person can be lifted by a rope without tying the rope to make a loop: Let the rope pass under left arm, around back, inside of thigh, outside around leg and inside ankle, then bring up end of rope and pass it under rope at fore leg, the rope thus passing under the hollow of foot, Fig. 4.



FIG. 4.



FIG. 5.

ATHLETIC GAMES AND CONTESTS.*

ALL that has been thus far given relates to the systematic physical training of the soldier; after this has been established on a firm basis, those games and contests which show individual excellence can be taken up in an intelligent manner. All national sports, like football, baseball, etc., should be encouraged. Indoor and outdoor meets, comprising gymnastic work, the usual field and track events, and military contests, furnish incentives which will produce earnest work on the part of the soldier.

Athletic meets should not be held too often; they should be made events in the soldier's life—which will demonstrate the benefits of the regular as well as the special training.

Once a year for an indoor meet and once for an outdoor are sufficient for each post, especially when an annual department or army meet is held. It requires some time to successfully train for any event—to get into the pink of condition—and, on the other hand, it is not advisable to be in training constantly; staleness is bound to result and constant hard work will undermine the constitution.

In training a team for a contest any one member

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of the team should usually not enter in more than two events ; he can not do justice to more.

Rules governing the usual field and track events are laid down by the Amateur Athletic Union and Intercollegiate Athletic Association, and would naturally be more or less followed by any committee of officers arranging for a military athletic meet. Attention is invited to the methods of rating teams or individuals by points.

Every event ought to be of the same value of any other event.

Athletically speaking, a hundred-yard dash, mile run, pole vault, and a wall-scaling contest are worth the same. Intercollegiate system of rating is 5, 2, and 1 points for first, second, and third places. The interscholastic, 5, 3, and 1. It would seem that the fairest, easiest, and best system is 4, 2, and 1. That rating is recommended. A first is well worth twice a second, and a second twice a third. In competition on apparatus work in a gymnasium the above method may of course be slightly varied from.

General rules for training for different events are given below. They are in keeping with the methods followed by the best athletes in this country in their different lines. The old idea of a severe dieting and thus practically draining the system has long since been exploded. Common-sense views now prevail.

Variety in food, within reasonable limits, is necessary ; a natural craving must be satisfied. No one wants to eat beefsteak three times a day. The average soldier with his short daily physical drill is in good shape to begin special training. His food is wholesome, and if he avoid excesses can put himself into first-class shape for any events by following the general instructions given below.

TRACK EVENTS.

SPRINTS.

The usual sprints are the 100-yard and 220-yard dashes; the 300-yard is also sometimes used in competition. Training for all three of these events is about the same.

The rules given need not necessarily be precisely followed. Individuals differ; some may need a little more work than others, some may vary the manner of starting slightly.



FIG. 1.

From an instantaneous photograph of
B. J. Wefers.

First of all, the heart must be strong. This is important in any athletic contest. The heart is the organ principally affected by running. As a rule, the lungs will take care of themselves, although weak lungs should not be taxed. However, it is assumed that the ordinary soldier's lungs are sound. A constant smoker's heart is usually different from the normal

one; its beat is not the same. Runners therefore must avoid smoking.

As stated under running, the mouth is held open so as to get sufficient volume of air in the lungs and

thus facilitate the working of the heart. It is evident that the start in a sprint is always important and it needs much practice. The crouching start is now almost universally used. This is as follows:



FIG. 2

Take an easy position with hands on scratch line and left foot just behind the line—for some men six or seven inches back; the other foot is about two and a half feet back of the left. Lean on the hands, hands open (the corks may be held in place by rubber bands).

At the word "Set" from the starter, lean forward as far as possible without losing the balance, head up, eyes on the course, every muscle pressing to the front, and ready to dive forward; the right knee is but little back of the line of the left heel and fore leg nearly parallel to the ground, Fig. 1. At the pistol shot, dive forward with all force, but the first two strides are taken in a crouching position, Fig. 2: it will be noticed that these two strides are necessarily short ones. If the body does not rise along the slanting line there will be a noticeable loss of time. When

once in an erect position and in proper stride, run with a very slight forward inclination of the body and chin well out to the front; the arms are swung



FIG. 3.

From an instantaneous photograph of
B. J. Wefers.

across and not alongside the body. Never look back, pay no attention to the other runners, keep the course strictly, and never stop until the finish line is passed; then throw up the arms and "run up into the air,"
Fig. 3.

Run on the balls of the feet and not on the toes, the spikes will enter the ground to better advantage. A long stride is of course to some advantage, but as a rule a natural stride is better than a cultivated one. The

stride may be slightly increased by lifting the legs well up and taking a long, loose jog.

For beginners, the following schedule for the sprints, for about four weeks, is recommended. At the end of that time the runner will understand his personal equation fairly well and should use his best judgment, remembering never to overdo the training; always leave the track when at all fatigued.

First practice the starting position until it can be fallen into at once.

First Day.—Practice start six times, going at full speed not more than twenty-five yards; rest between each start, jog half the distance, and finish last half at speed.

Second Day.—Jog quarter of a mile, developing the stride.

Third Day.—Run two thirds the distance twice at speed; rest between.

Fourth Day.—Practice start about ten times, going at speed and not more than twenty-five yards; rest between starts; finish by jogging twice the distance, developing the stride.

Fifth Day.—Run two thirds the distance twice at speed; rest between.

Sixth Day.—Run a trial on time; rest and jog for twice the distance, developing the stride.

Seventh Day.—Jog twice over course.

The start should always be practiced with the pistol, or, if this be not available, snap two boards together.

Do nothing but jog slowly over the course the day before a race, and do not run a trial against time for four days previously. Some runners find they can make a stronger finish in the 220-yard sprint by easing up almost imperceptibly for five or ten yards when about reaching the 200-yard mark; also in the 300 by easing up similarly at about the 275-yard mark.

The proper costume for runners is a light sleeveless shirt and loose trousers that barely reach the knees; the practice shoes are made of horsehide with no heels and six spikes in the toes. Competition shoes are made of the lightest calfskin. Wear light socks in practice; in a race wear "pushers"; these are made of chamois and cover the toes from the instep downward.

The soldier in training for these sprints, in light or heavy marching order, should wear the required uniform from the first, but carry no loads for the first two weeks; after that one half the equipment may be carried every other day for a week, the next week about three fourths the equipment, and on one of these days carrying the full equipment. Practice with full equipment should not be indulged in more than once a week, and a trial against time a week before the race is sufficient.

THE MIDDLE DISTANCES.

These apply to the quarter-mile and half-mile runs. The quarter is usually called the 440-yard dash, as it is a sprint from start to finish. The preparatory for the quarter and half is practically the same. For about three weeks take smart walks of four or five miles across country, ending with a half-mile jog, then for a month or more run at an easy jog distances a little less than the quarter or half on one day and greater distances the next. Go at speed for 100 yards about once in six days, and a trial for the quarter about once in ten days, and for the half once every two weeks; rest one day in the week. After this training each runner will be able to tell about what he needs.

As the quarter is practically a sprint, the schedule governing sprinting will furnish a guide.

The most important thing in these runs is that the runner should be a judge of pace, to know just how fast he is going, and to acquire this a watch should be held on the runner every day and portions of the distance marked off and the time given for each division. In the quarter, sprint from start to finish. Jump into the lead at start and hold it all

the way if possible. However, the runner must be careful not to be "run off his feet" in the early part of the race. He knows what pace he is capable of from start to finish and must not outdo himself.

The half demands a greater judge of pace than the quarter. In practice the time at every furlong should be given the runner.

To take part successfully in the half mile, one must make a specialty of it and not take part in any other event. It is most important in this that a runner be not "run off his feet." Some half-milers a little weak in sprinting pay more attention to practicing sprints than to distance. With equal endurance the fastest sprinter will finish first. Also half-milers strong in sprinting pay much attention to distance.

If a sprinter, it is preferable to trail in second or third place rather than take the lead.

The same principles given for training for sprints, in light or heavy marching order, apply to the quarter and half mile.

THE MILE RUN.

This is about the only long-distance event practiced in America. Preparatory work consists in walking and running at a jog four or five miles a day for a month or more; then for several weeks observe the following schedule:

First Day.—Go between one and two miles at an easy jog.

Second Day.—One half mile at smart pace.

Third Day.—Quarter at speed.

Fourth Day.—Three quarters at a fair jog.

Fifth Day.—Between one and two miles at an easy jog.

Sixth Day.—Quarter at speed.

Seventh Day.—Rest.

The trials can then be made about once in two weeks, possibly oftener; make the trial the day before resting.

A mile runner should be a judge of pace and know how fast he can do a mile. Run the mile at this pace regardless of the other runners.

There is much danger in this race of beginners being "run off their feet." A magnificent stride is



FIG. 4.—T. P. Connett's stride.

shown in Fig. 4; the mouth is open and arms hang down, which relieves the chest and shoulders of the weight; this tells in a long race. Also the swinging of the arms at sides seems to give a forward impetus to the runner.

HURDLES.

The hurdle races recognized by all athletic clubs in this country are the 120-yard and 220-yard. The 120-yard, or "high hurdle," is run over ten hurdles three and a half feet high, placed ten yards apart, the first and last being fifteen yards from the starting and finishing line, respectively.

The 220-yard "low hurdle" is run over ten hurdles, two and a half feet high twenty yards apart, the first and last twenty yards distant from the starting and finishing lines respectively.

To be a successful hurdler requires long practice. Skill, strength, nerve, spring, and a cool head are necessary.

Preliminary training can be started in the gymnasium by such exercises as rising on toes and heels, raising legs as in double step and double jump on the toes. There is also an exercise of raising one leg bent at the knee forward, and the other leg bent at the knee backward, alternating the legs at each motion. This brings into play the muscles used in hurdling and is similar to the movements of the legs in taking the hurdle.

After the preliminary practice, take up the outdoor work by jogging up and down the track the first few days, occasionally spurting forty or fifty yards, then practice the start several times, clearing the first hurdle. After a couple of days of this, take two hurdles, the next day three. After this, whenever the hurdles are being jumped the runner should rush at each hurdle with the utmost speed; this is all important. After a few weeks of preliminary work in taking a few hurdles, a trial over all ten may be taken. This trial may be made about once

every five days ; on other days the work should include not more than four hurdles.

Speed between the hurdles is all important ; to obtain this it is necessary to start the foot which has crossed last over the hurdle forward for the first step before the forward foot has reached the ground, thus making the first step after the jump a very short and a very quick one. The tendency is upon landing after the leap to take a long stride forward ; the runner must avoid this and force himself to take a short step, else he will never be a speedy or successful hurdler.

As a rule, the runner alights between seven and seven feet and a half beyond the obstacle, then takes the short, quick step of four and a half to five feet, which gives him his impetus ; then he makes a long step of five and a half to six feet, and then another short step of about four and a half feet, which brings him about seven and a half feet from the next hurdle. After the last hurdle is cleared the head should be thrust forward and the finish made as strong as possible.

Training for the 220-yard is similar to that for the 120-yard.

The jump over the hurdle is different ; in fact, there is no jump ; the runner must spring as little as possible and clear the hurdle by a dexterous movement of the legs ; this movement is similar to that which one would make if suspended from the ceiling, toes just touching the floor and a series of hurdles on a treadmill passing under him. To clear the hurdles he merely lifts his legs one after the other ; thus the body of the hurdler must always be kept on as constant a level as possible.

The best number of strides between the hurdles



FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.

From instantaneous photographs of E. H. Cady.

is seven, although a runner with a short stride may have to take nine. However, this often brings the take-off too close to the hurdle and necessitates slowing up; it is therefore better to train for eight strides, which necessitates jumping from alternate feet. Even this loses time on a curved track, and the aim of the hurdler should be to have an odd number of strides between the hurdles and to take off from the right foot. All hurdles should be cleared by as nar-



FIG. 9.



FIG. 10.

From instantaneous photographs of E. H. Cady.

row margin as possible, and it is even better to hit the top of the hurdle lightly rather than clear it too much.

In order to become proficient in the number of strides between hurdles, spots may be made on the

ground indicating where the feet should strike. Some runners prefer the standing to the crouching start in hurdling; they maintain that they are in better condition to take the first hurdle, and that it is difficult to rise from the crouching start to the proper jumping position with so short a run; however, those who use the crouching start claim its superiority, and this question should be left to the judgment of each individual runner. It must be remembered that the first and every hurdle should be rushed at with the utmost speed.



FIG. 11.

From an instantaneous photograph of E. H. Cady.

The costume for hurdlers is similar to that for runners. The shoes should be made of kangaroo skin, six spikes in toes, a quarter-of-an-inch heel, two spikes placed at extremities of a diagonal drawn through center of heel.

Figs. 5, 6, 7, 8, 9, 10, and 11 show the different positions of the runner in clearing the hurdle.

*FIELD EVENTS.***RUNNING HIGH JUMP.**

This requires the ordinary jumping standard and a runway about forty or fifty feet in length, made of cinders well rolled and dampened so as to be springy.

The posts of the standards are placed about eight feet apart and the earth is loosened where the jumper will alight.

Preliminary training for this event consists of such gymnasium work as will strengthen the legs, chest, and back—especially the back; work with pulley weights and dumb-bells is good for this; also bending trunk, legs remaining straight, and touching floor with finger tips.

For the legs take the exercise of raising body on toes; starting gradually, increase from day to day until possible to raise body four or five hundred times. In a similar manner take the exercise of “knees full bend.”

The jump should not be practiced during the preparatory work, nor at all on the hard floor of the gymnasium. Most jumpers take off with the left foot and stride over the bar with right.

In the following description it is assumed that the jumper takes off with the left foot:

The shorter a high jumper can make his jump the better, as less power is wasted in the approach. Our best jumpers start about seventy-five feet back and run slowly to within about three strides of the take-off; this point should be absolutely fixed by every jumper.

From the middle of the runway the jumper

swings slowly toward the right side of track and then at the fixed point turns sharply to the left and gets into his stride as rapidly and with as much force as possible. This should bring the left foot squarely on the take-off and enable the jumper to give the body a twist that aids greatly in clearing bar. Of course one who jumps from the right foot swerves toward the left side of the track and takes the bar with right side toward it. Fig. 1 shows the



FIG. 1.



FIG. 2.

From instantaneous photographs of S. A. W. Baltazzi.

jumper starting; his eyes are fixed on the bar and never leave it until bar is cleared.

He takes an easy run until he reaches the fixed point, or his "mark"; then takes his three strides, and his left foot is at the take-off.

As a rule, the take-off is a distance about the height of the bar from the base line of the standard;

however, an expert jumper can take off a little nearer the bar than this.

On reaching the take-off the left heel strikes first, giving power for the jump; the toe gives it direction.

Fig. 2 shows the jumper just as the jump commences, the right foot rising, and the muscles of the arm and back are now coming into play to raise the trunk.

Fig. 3 shows the jumper with right leg over bar and left leg almost up.

The muscle of the neck connecting with those of



FIG. 3.

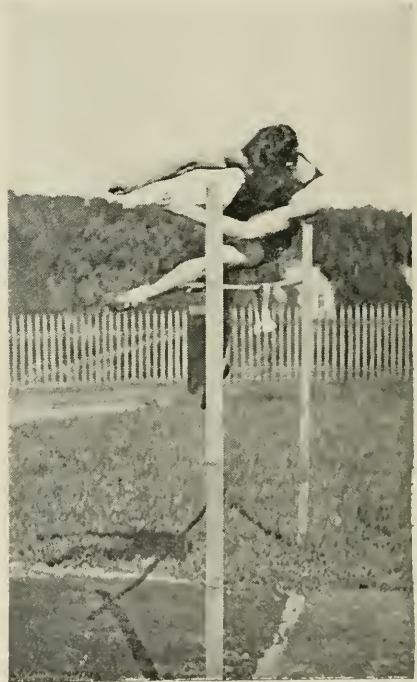


FIG. 4.

From instantaneous photographs of S. A. W. Baltazzi.

sides and abdomen shows the strain of the body in raising the trunk and left leg. The left leg must be brought in closely to the right thigh.

Fig. 4 shows the bar cleared, eyes still on the bar.

Fig. 5 shows the jumper about to land.

As the bar is cleared, the back muscles, assisted by the right arm, which is thrown up in the air, gives the twist for the body and the jumper alights, facing the bar.

The jump is a complete semicircle.

Fig. 5 shows the body lying along the curve of this semicircle.

The bar in each of the jumps shown was at five feet eight inches, showing the perfect form of the jumper. The figures show that the jumper practically strides over the bar instead of going over in a compact bunch.



FIG. 5.

From an instantaneous photograph of
 S. A. W. Baltazzi.

Fig. 6 shows the world's champion jumper, Sweeney, making the world's record of six feet five and five eighths inches. Here the jumper appears lying flat on his back.

Up to six feet Sweeney clears the bar with body in an upright position. Higher than that he springs up from the ground as much as possible, then heaves his trunk and legs forward, and twists his body in the air until he assumes the horizontal position

shown. He depends entirely upon the momentum of his run and the twist of his body above the bar to get his head and shoulders over.

Each competitor in competition is allowed three jumps at each height; running under the bar counts

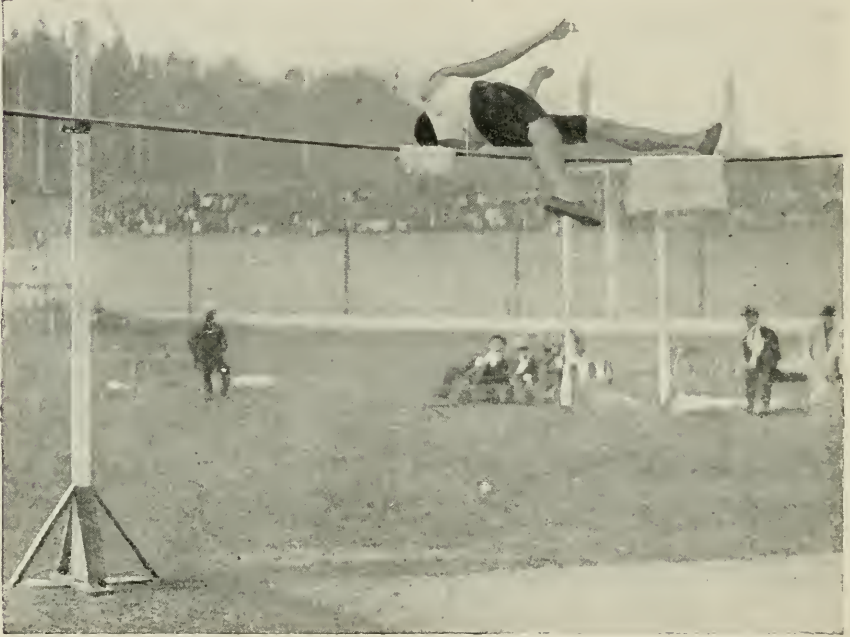


FIG. 6.—Sweeney making his world record jump, 6 feet, $5\frac{5}{8}$ inches.

as a balk, and three balks as a trial; thus it is better to balk rather than jump if not coming precisely on the take-off. A competitor may decline to jump at any height in his turn, but by so doing forfeits his right to jump again at that height. Some men wait until the bar reaches a fair height before trying a jump, thus reserving their strength.

The jumping costume is a jersey suit, which keeps the muscles warm; the shoes are made of kangaroo skin, and worn without socks. The shoe of the foot which strikes the take-off has a quarter-

inch heel, with two spikes placed at the extremities of a diagonal passing through the center. There are no spikes in the other heel, but it is made slightly thicker. Both shoes have six spikes in the toes.

RUNNING BROAD JUMP.

This is usually jumped on earth. The take-off is from a joist five inches wide sunk flush with the earth, and the front edge of this joist is the scratch line from which all jumps are measured. The earth for a depth of three inches and a width of twelve outward is removed in front of the joist.

Broad jumping combines the elements of sprinting, hurdling, and high jumping. The training consists of sprinting frequently for seventy-five or one hundred yards to acquire speed, practicing the high jump, paying more attention to form than to the height cleared, and taking the high hurdles occasionally.

After having attained good form, a half dozen jumps every other day will be all the practice necessary. As to the details of the jump, it is first necessary to lay out the run and to arrange so that there will be no mistake in taking off. Lay out two marks, the first a given number of strides from the take-off—our best jumpers take either eight or nine strides; the second mark, which is the starting point, is farther back. This distance between the first and second marks is a little over one hundred feet. In any event, the jumper must be sure that if his jumping foot, either right or left, strikes the first mark, the same foot must come squarely upon the take-off. The position of the start in the broad jump is similar to the standing start in sprinting. The jumping foot is on the starting mark, the other

slightly in advance. The jumper starts down the track, measuring his strides carefully, so that his jumping foot will strike squarely upon the first mark; then he sprints at his greatest speed to the take-off, upon which the jumping foot ought now to



FIG. 1.



FIG. 2.

From instantaneous photographs of R. J. Lyons.

squarely land; at the last step before the take-off the jumper gathers himself together and crouches as low as his speed will permit, and brings his jumping foot down hard, and at the same time throws his arms forward and upward, the hardest strain coming on the back muscles. The eyes should be fixed on some distant high point, and not on the ground; this often adds an inch or two to the jump.

Fig. 1 shows the jumper in the middle of his jump, his legs curled up under the chin and arms extended forward in order to throw the balance of the body as far front as possible. The jumper describes an arc. As he alights, his feet are held together and well forward, head and arms well forward, so as not to lose the balance and fall backward.

Fig. 2 shows the correct position for alighting.

It is well to rest three or four days before a contest, and it is not deemed advisable to do the best work on the first jump; do the best on the second and every jump thereafter. A short spin before the first jump is a good way to limber up. The costume is the same as that for the high jump.

THROWING THE HAMMER.

Throwing the sixteen-pound hammer and putting the sixteen-pound shot are the two recognized weight events in this country. The length of the complete hammer is four feet, and its weight sixteen pounds. The hammer head must be a metal sphere. Wooden handles were formerly used, but now a flexible steel handle is universally adopted. The throw is from a circle seven feet in diameter. The main thing in hammer throwing is ease in movement; when the hammer is thrown around the head, it is kept as far as possible from the body, the arms are not bent nor the muscles set, and the shoulders move as freely and easily as possible. Ease of movement is attained only after long practice. A half hour's practice every day for months is necessary, and the first endeavor should be to obtain perfect control of the hammer.

Exercises which strengthen the arms and back will assist the hammer thrower.

After proficiency in throwing the hammer is attained, an hour's practice two or three times a



FIG. 1.



FIG. 2.

From instantaneous photographs of W. O. Hickok.

week is sufficient. Several days' rest are necessary just before a competition.

The details of the throw are shown in the illustrations. Fig. 1 shows the start, the hammer head on ground outside of circle, the thrower having a firm grasp on handle and leaning well over, so as to keep the hammer as far away from the body as possible. Fig. 2 shows hammer as it is being lifted from ground to be whirled about the head, the hammer being held well out from the body. Fig. 3

shows the arms straightened out during the whirl. Fig. 4 shows the position of the thrower as he swings the hammer about his head to gain the necessary momentum; this whirl is at first slow and becomes faster and faster, and is at top speed just about as the thrower is ready to turn for the throw. It is customary to whirl the hammer three times around the head before the turn. Fig. 5 shows the turn; during this turn the hammer must be kept well behind the body. The thrower moves his feet about as fast as possible, and never allows the hammer to



FIG. 3.

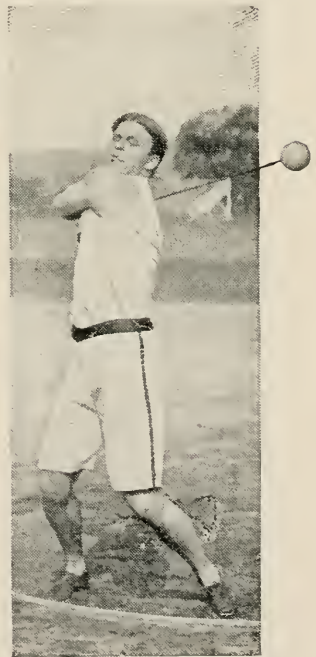


FIG. 4.

From instantaneous photographs of W. O. Hickok.

get ahead of the motion of the body, otherwise the hammer will throw the thrower. By jumping around on the last turn an expert thrower can make



FIG. 5.

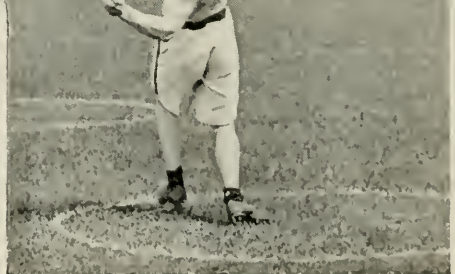


FIG. 6.



FIG. 7.

From instantaneous photographs
of W. O. Hickok.



about twenty-five feet more than without it. Fig. 6 shows the moment just before the final heave, when the hammer is let go. This is done without a jerk, the hammer slipping freely from the hands at the proper moment, otherwise the momentum acquired will be destroyed. Fig. 7 shows the position of the body just after the throw; it is seen to be thrown backward to keep from stepping out of the circle.

Instead of using the single turn in throwing the hammer the double turn is now generally used, and it has been found that this adds several feet to the throw. After whirling the hammer around the head three times, the two turns are made with as much rapidity as possible, care being taken that the hammer never gets ahead of the motion of the body.

PUTTING THE SHOT.

The sixteen - pound shot is put from a seven-foot circle, along four feet of the circumference of which is placed a board four inches high; this board is the front of the circle, and the put is measured from it to the nearest mark made in the ground by the shot. To become expert in this event requires long practice; the beginner must strengthen his arms, paying special



FIG. 1.

From an instantaneous photograph of W. O. Hickok.

attention to the development of the biceps and deltoids; this can be done by work on the parallel bars and by punching the bag. The latter gives swiftness. Sprinting is necessary, as it teaches the shot putter to be quick and light on his feet. The beginner should practice with the shot six days in the week, and should work until he feels tired. After

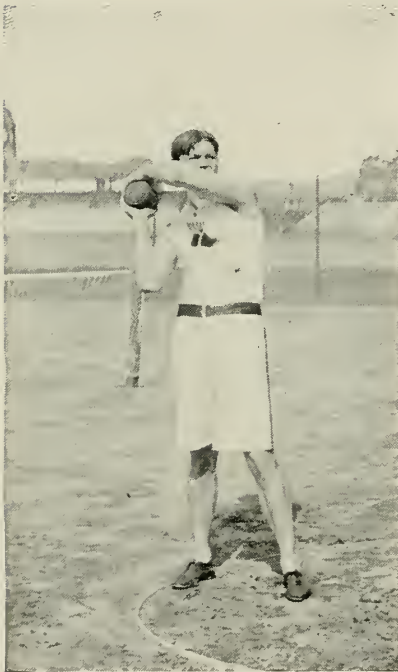


FIG. 2.



FIG. 3.

From instantaneous photographs of W. O. Hickok.

having mastered the details of the put and having obtained good form he need practice but two or three times each week.

The illustrations show the details of the put. The right arm should be spared as much as possible. When picking up the shot, the athlete holds it in his left hand. Fig. 2 shows the starting position,



FIG. 4.

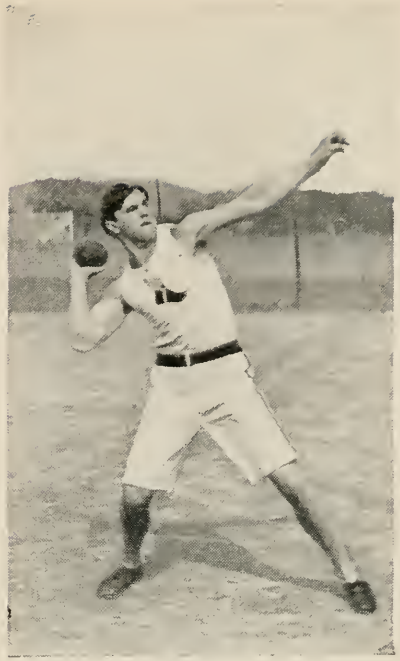


FIG. 5.

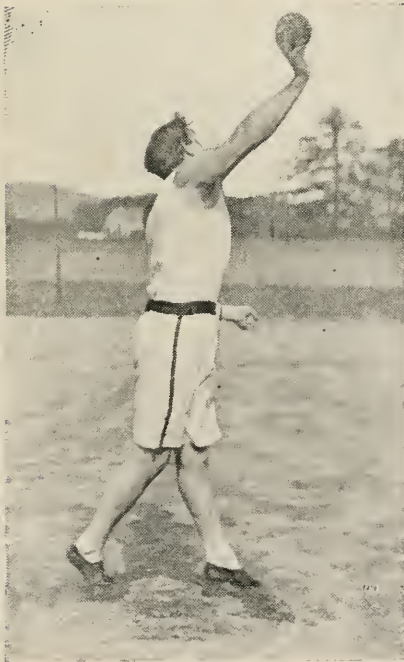


FIG. 6.



FIG. 7.

From instantaneous photographs of W. O. Hickok.

shot having been rolled over into right hand; the shot must be held above and not behind the shoulder. Taking an easy position, the shot should be well balanced in the right hand, but not gripped tightly. Fig. 3 shows the start off, whole weight of the body on right leg, left arm held forward as a balance. Fig. 4 shows left leg well raised; then a quick hop is taken with right leg, keeping shot as near shoulder as possible. After alighting on right foot, left foot touches ground as shown in Fig. 5, and it ought to fall very close to board rim. Figs. 6 and 7 show forward movement of body and transposition of feet. The attitude for thus getting across the circle is a crouching one. As soon as left foot touches the ground it is brought swiftly backward, throwing entire right side of body forward. A half turn is made, so that right shoulder will be in exact direction in which shot is to be put. After the impetus forward has been given by the legs and body, shoot the arm outward with all possible force, the motion being one such as would be made in striking forward and upward against a punching bag. This motion, the change of feet, the lift, the turn, the thrust, is a very rapid one, and it must be continuous, smooth, and uniform from beginning to end, with no jerks or pauses. The shot leaves the hand easily, and the forward heave of the body must be such that the equilibrium of the body will just be maintained.

The costume worn in this event, as well as in throwing the hammer, may be the usual running costume, although a jersey suit may be worn if preferred.

POLE VAULT.

This requires the jumping standard so arranged that it can be raised as high as eleven feet and over. The posts of the standard are placed about ten feet apart, and there should be a runway, such as is used in jumping. The earth where the vaulter alights is turned over and raked, so as to make a soft landing place. The vaulting pole is made of selected straight - grained spruce, sixteen feet in length, and fitted with an iron spike at lower end. The pole is usually wound with tape for a distance of about four feet along that part where it is to be held by the hands in vaulting.



FIG. 1.

From an instantaneous photograph of Mr. Buchholz.

The costume for pole vaulters is the same as that used in jumping.

To be successful in this event requires long practice, the arm, chest, and back muscles being the ones that must be developed. This can be done by using chest weights, rope climbing, and work on parallel bars and rings; also the exercise of "arms downward bend" while on all fours in the "leaning rest"

is very beneficial. Sprinting is also very important.

While learning the details of the vault the bar should not be placed higher than six or seven feet,



FIG. 2.

From an instantaneous photograph of Mr. Buchholz.

and the beginner should not vault oftener than twelve or fifteen times a day, and only work every other day, the intervening days being devoted to sprinting. Every height should be taken three times, and the bar then raised. About once a week a trial vault can be made.

After attaining good form less practice is needed.

As to details of the vault, it is necessary, as in the jumping, to lay out the take-off and run. Some take a long run, depending entirely upon speed to carry them over the bar, while others take a short one, and throw all their force and energy into the

leap. In either case the starting point and take-off should be fixed spots on the runway. Always measure the pole before every vault; to do this, hold the pole upright until it touches the bar, let it fall back, and grasp it with the lower hand one foot below the point where it touched the crosspiece. The vaulter who takes off with left foot has the left hand below, and one who takes off with right foot the right hand below. Having measured the pole, the vaulter seizes it with both hands, one at the spot indicated, and the other two and a half to three feet farther up. The thumbs are up, the same as in climbing the rope.

The illustrations show the vaulter taking off with left foot. Fig. 1 shows the vaulter in the middle of the runway, pole pointing toward the standard, eyes fixed on bar; from this time he does not remove his eyes from the bar until he has cleared



FIG. 3.

From an instantaneous photograph of Mr. Buchholz.

it; he never looks to see where he places the pole. Running down the runway, some vaulters hold the pole well down, as shown in Fig. 2, while others hold it well up over the chest; the beginner will find it

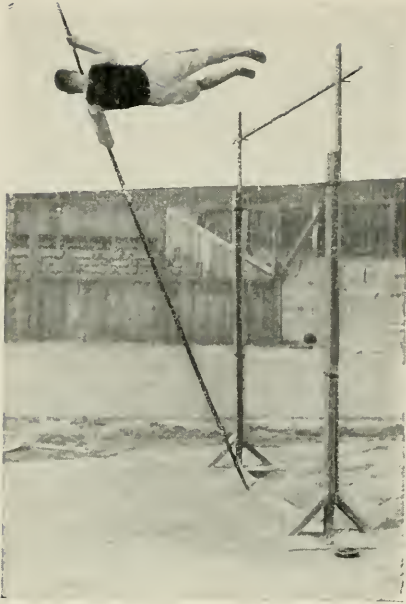


FIG. 4.

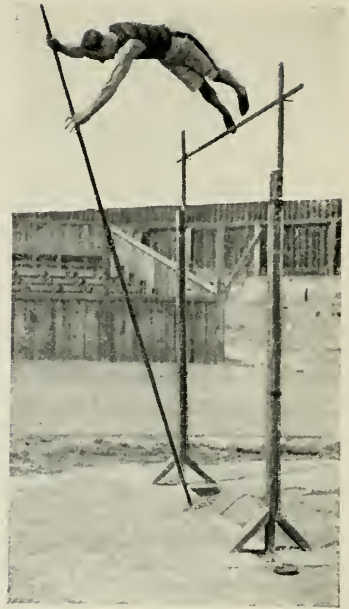


FIG. 5.



FIG. 6.



FIG. 7.

From instantaneous photographs of Mr. Buchholz.

better to hold his higher hand well up under his head. Going down the runway at full speed, the vaulter plants the pole firmly on the take-off with all his force and springs straight for the bar. The right arm now stretches taut, Fig. 3, and the body swings toward pole; the body as it rises turns, the object being to twist and face the pole, so that when the height of the bar is reached the back will be toward it, and the heels may be lifted over. Fig. 4 shows the vaulter just a moment before he reaches this position. The working of the arms is shown in Fig. 4, and consists of pulling with the right arm and pushing with the left; this lifts the body, the heels clear the bar, and the twist which is now imparted to the body brings the vaulter facing the bar, as shown in Fig. 5. The upward motion now changes to a fall. Just as the pole is let go a twisting motion is given to the body, so that the vaulter falls with his back to the standard, one complete gyration in mid-air having thus been made; Figs. 6 and 7 show this. However, this last twist is not necessary, as some vaulters fall facing the standard. The rules of vaulting do not permit the upper hand to be moved during the vault, but the lower hand may be brought up to any point below the upper; some vaulters do this. In falling, the muscles should be relaxed, the body striking the ground lightly, so as to avoid injury.

INTERCOLLEGIATE RECORDS OF THE UNITED STATES
(Corrected to 1903).

EVENT.	Record.	Made by
100-yard dash.....	9 $\frac{3}{8}$ sec.	A. J. Duffey, Georgetown.
220-yard dash.....	21 $\frac{1}{8}$ "	B. F. Wefers, Georgetown.
Quarter-mile run.....	49 $\frac{3}{8}$ "	M. W. Long, Columbia.
Half-mile run.....	1 min. 56 $\frac{3}{8}$ "	E. Hollister, Harvard.
Mile run.....	4 " 23 $\frac{3}{8}$ "	G. W. Orton, U. of Pa.
Mile walk.....	6 " 52 $\frac{3}{8}$ "	F. A. Borchering, Princeton.
120-yard hurdle.....	15 $\frac{3}{8}$ "	A. C. Kraenslein, Pennsylvania.
220-yard hurdle.....	23 $\frac{3}{8}$ "	A. C. Kraenslein, Pennsylvania.
Running high jump.....	6 ft. 3 ins.	J. D. Windsor, Jr., U. of Pa.
Running broad jump.....	24 " 4 $\frac{1}{2}$ "	A. C. Kraenslein, Pennsylvania.
Pole vault.....	11 " 5 "	R. G. Clapp, Yale.
Throwing 16-lb. hammer.....	164 " 10 "	DeWitt, Princeton.
Putting 16-lb. shot.....	44 " 8 $\frac{1}{2}$ "	F. Beck, Yale.

AMERICAN AMATEUR RECORDS
(Corrected to 1903).

EVENT.	Holder.	Record.	Where made.
100 yard dash.....	A. F. Duffey.	9 $\frac{3}{8}$ sec.	New York, 1902.
220-yard dash.....	B. J. Wefers.	21 $\frac{1}{8}$ "	New York, 1898.
Quarter-mile run.....	W. Baker.	47 $\frac{3}{4}$ "	Boston, 1896.
Half-mile run.....	C. J. Kilpatrick.	1 min. 53 $\frac{3}{8}$ "	New York, 1895.
One-mile run.....	T. P. Conneff.	4 " 15 $\frac{3}{8}$ "	New York, 1895.
One-mile walk.....	F. P. Murray.	6 " 29 $\frac{3}{8}$ "	New York, 1883.
120-yard hurdle.....	A. C. Kraenslein.	15 $\frac{1}{8}$ "	Chicago, 1898.
220 yard hurdle.....	A. C. Kraenslein.	23 $\frac{3}{8}$ "	Chicago, 1898.
Running high jump.....	M. F. Sweeny.	6 ft. 5 $\frac{5}{8}$ ins.	New York, 1895.
Running broad jump.....	Myer Prinstein.	24 " 7 $\frac{1}{4}$ "	Philadelphia, 1900.
Pole vault.....	R. G. Clapp	11 " 10 $\frac{1}{2}$ "	Chicago, 1898.
Throwing 16-lb. hammer..	J. Flanagan.	164 " 6 $\frac{1}{2}$ "	Bayonne City, 1899.
Putting 16-lb. shot.....	G. R. Gray.	47 "	Chicago, 1893.
Throwing discus.....	M. J. Sheridan.	127 " 8 $\frac{1}{4}$ "	New York, 1899.

The best of the above records are also the world's amateur records.

The band music for the two sets of music given in this manual can be procured from Carl Fischer, Wholesale Music Dealer, New York City, or from Edwin G. Clarke, Plattsburg, N. Y. The music is complete and arranged in sheets of regulation size for use of bands in the service.

DRILL MUSIC.

Set No. 1.

To fit Capt. E. L. Butts' Drill.

Music by Edwin G. Clarke

SOLO—CORNET PART.

Cornet.

Drums. *f*

Waltz. *mp*

The musical score consists of ten staves of music in 2/4 time. The key signature is one flat (B-flat). The notation includes various rhythmic values, including eighth and sixteenth notes, and rests. Dynamic markings include *ff* (fortissimo) and *March. >* (March, accent). The score is divided into sections by first and second endings, indicated by '1.' and '2.' above the staves. The piece concludes with a double bar line and repeat signs.

Time must be made to follow action. Music will fit for slow or fast.

DRILL MUSIC..

Set No. 2.

To fit Capt. E. L. Butts' Drill.

Music by Edwin G. Clarke.

SOLO-CORNET.

Cornet.

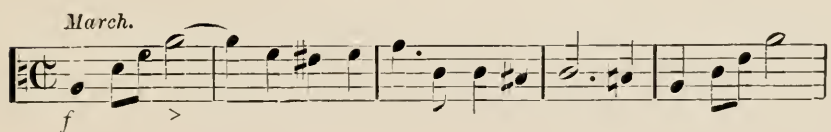
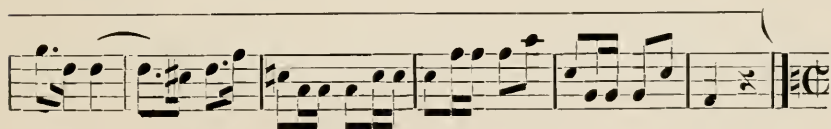
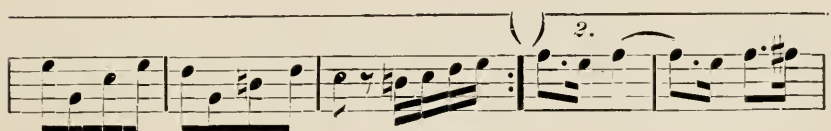
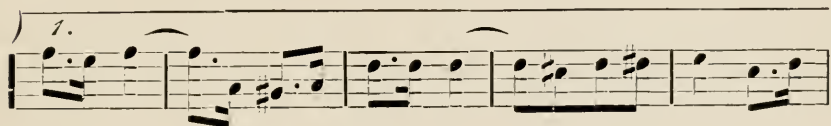
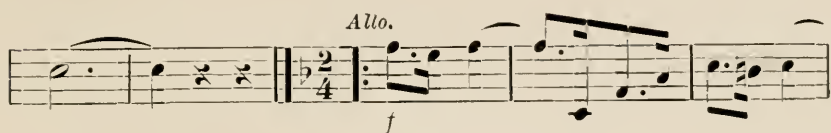
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